COMPUTERWORLD

catch out of MAPI

By Lynda Radosevich

Microsoft Corp. last week began to deliver on its year-old promise to let corporate end third-party developers access messaging services via Windows without buying

The company said it has begun limited shipment of a software developer's kit for its Messaging Application Programming interface t.0, which is also known as "extra MAPI. Microsoft will demonstrate and more broadly distribute the developer's kit at the Win32 Professional Developer's Conference, to be held Dec. t3 in Annheim, Calif.

Extended MAPI is a messaging system that is meant to allow different vendors' desktop applications and back-end messaging services to work together via Windows. Its advantage is that users can choose standard desktop inter-MAPI, page 10

PI CLIERT APIS MAPI SUBSYSTEM MAPI service recovers API

Microsoft takes the IBM pumps client/server

'Starter kits' will integrate other vendors' products with its own

By Johanna Ambrosic and Elizabeth Horwitt

IBM will shore up its client/se offerings carly next year with "starter kits" that will include oth-

dards that it will support in its attempt to integrate multivendor environments in customer shops. Although IBM has not settled on a er vendors' products for specific applications, according to sources permanent name, internally the

Later in the year, IBM will make

tributed Computing Syste print (see chart page 12). increasing popularity of OS/2 as a corporate server desktop operat-ingsystem — will likely strengthen

and clarity IBM's confi ent/server hand, users and observ

ers said. "It would be helpful to know what they are going to do," said Wade vice president at Washington National

шталсе Со. Although IBM has reco ten its elient/server strategy gether (see story page 12), it has been a long time in coming. "There are so many factions and busi-nesses within IBM, it is tought o get consensus on anything," said Judith Hurwitz, an independ consultant in Watertown, Mass.

IBM's Client/Server Computi Unit, formed in November 1992, claims to have implemented client/ server systems at roughly 90 custemer sites, but its bottom-line im pact on IBM's business has been

IBM, page 12

Nintendo plaving no

Brokerages seeing IS dividends

By Thomas Hoffman

The dizzying pace of the brokerage industry's three-year profit climb stems in large part from the increasingly important role of information technology as a business strategy enabler and costentting tool.

Industry leaders such as Merrill Lynch & Co. and Salomon Brothers, inc. are not only padding the bottom line through data center consolidations (see story page 14) and resulting cost savings, but they are also outpacing other ver-

6 XC -

their early adoption of advanced technol-While the rest of

the world stood still for the past three years, Wall Street was surging shead with new technologies, served Daniel G. Grant, president and national, a New York based financial sys-

tems integrator.

Brokerages, he added, are light-years ahead of other vertical markets in exploring advanced tech-nologies such as massively par-allel processing systems, neural networks and object-oriented pro-

amming tools in a never-ending

been able to adopt these les edge technologies so quickly is that they embraced business pro-cess re-engineering dictums. Ed-ward Goldberg, exceptive vice president of operations, systems



did not. Page #s

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ria will incorporate pieces of NextStep

Novell to bring NetWare multimedia service

Lotus and Digital discuss an Alpha AXP ver-

Ambra releases low-priced 486 portables.

n Novell will bundle Reach Software's workflow technology with AppWare development

to Windows users. Page 4

port multiprocessing. Page 8

ssion of Notes. Page 6

developers. Page 12

tax authority. Page 16

Proch

Page S

ENTERPRISE METWORKING

even Hansen, director of IS at The Toro Co., is rebuilding the company's EDI systems to provide the quick response its retail customers oow expect. Page 55

APPLICATION DEVELOPMENT

e In Windows/Unix environs aren't always adequate. Page 75

MANAGEMENT

. Would you allow competitors on your network? You may have to. Page 81 EDI isn't that hard, if you know where to get

Information Page 85 THE CW GUIDE TO MAINFRAMES

Claco users face touch upgrade decisions. Non can source better rformance out of thut old

a Informix rehulids OnLine database to supainframe. Joe Vincent at Humana says that with cur-■ IBM's flip-flop on operating systems puts off rent tools, took CPU-busy is schievable. Buyers' Scorecard: Users say Landmark Brokerage firms fight fraud with sophisticated surveillance tools. Page 18 Systems' MVS performance ■EDS unage \$1.5 billion contract from British

itor is tops. Firing Line. The Unisys 2200/500 offers high performance/ low environmental cost. Page 83 to 109

Beta testing the good, bad and the down-

· You'll rise faster with com-

mand of both old and new

development tools. Page 122

@Peast Want some tips on

right ugty. Page 111 New Legent software offers fresh approach CAREERS

to LAN backup and recovery. Page 24 ors skirmish over who has the best means of querying relational databa Page 29

plans sortie into CICS eti server territory. Page 29

MARKETPLACE great utilities? Page 129 COMPUTER INDUSTRY

■AST moves quickly to integrate Tandy manufacturing operations. Page 137 break Proc.37

COMMENTARY BM has u good shot at u comeback, writes Bill Laboris, but old habits will be hard to

Digital plans spring rollout of multip **ENTERPRISE NETWORKING**

a Distilusioned by PC-based E-mail servers, users are turning to RISC machines. Page M.

■ IRM tries to boost PC DPS 6.1 with object-ori

LARGE SYSTEMS

sor LAN servers. Page 47

DESKTOP COMPUTING

ented shell for DOS. Page 37

WORKGROUP COMPUTING

#HP affirms its commitment to the HP 3000.

Company Index Page 135 Editorial/Letters to the editor ... Friday Stock Ticker Page 136

Walking the edge. Technological hrinkmanship has become a less popular pursuit in these austere times, but some companies still say the rewards of early adoption justify the risks. Brokerage firms have invested aggressively in new technologies such as massively parallel processing. Page 1 And companies such as Citicorp Mortgage and Chevron Canada say the competitive edge they get from serving as heta sites makes up for the hassles. Page 111

Messaging difficulties. Companies that are used to mainframe-based scheduling packages are often surprised and disappointed when they make a switch to PC-based mail-enabled scheduling nackasten which operate out much slower store-and-forward besis. A couple of new products can help, but some companies are rethinking whether the concept of using E-mail as the foundation for schedoling makes sense. Page 47 The buge volume increases in messaging traffic caused by mail-enabled applications are

also causing PC servers to hit the wall. At Bell South Tele tions in Birmingham, Ala., for exampie, performance crodes substanti ly with more than u cou users per server. Page 55

crowded. Lawn and turf products supplier. Toro, has launched a major revenue of its EDI system to provid faster response and better service to retail customers. Page 56 Other commies are going even further and anding together in colle EDI networks that include custo ers, suppliers and competitors. Pag 81 At this point, there are so man

EDI support groups and organiza

tions that it's hard to figure out where to turn first. Tip: Start by finding a local user group to collect recommendations. Page 85

ons on Comdex: This show is a great pla vital signs of the industry and, according to Charles Babcock and Paul Gillin, there were some troubling symptoms on display. Bubcock says the event reflected an industry in turmoil, where nothing is quite what it seems. Page 6 Gillin worries that the fantasy isn't just show and that vendors really are oblivious to the real-world

concerns of customers. Page 37 Latest victims of computer-driven job obsolescence: Crash car dummies may be ont of work soon if General Motors and Los Alamos National Labs go ahead with proposed research on crash simplation. Page 68

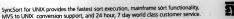
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Sun makes its Next move

Licenses NextStep, makes \$10 million investment

By Melinda-Carol Bullou and James Duly

last week moved to naite their object technologies, throwing down a challenge to Taligent, Inc. and Microsoft Corn., which ure developing their own cavi-

Under the terms of the deal SunSoft will license Next's NextStep object application environment and incorporate rtions of it into Solaris, Son's Unix derivative However, Sun officials said they will maintain compatibility with existing Sol

Also, Sun is investing \$10 mil lion in Next, which will sive the Redwood City, Calif., company ob-moded cach analysts unid

Next will license Sun's object and distributed com sology including Network File System, Sun's Object Man agement Oroup (ON ant object broker and Sun's interface definition language Next will also port NextStep to the SPARC architecture.

Some industry analysts questioned the impact of Sun's move on the Common SunSoft, Inc. and Next Computer, Inc. Open Software Environment initiative (COSE). Sun officials intimated that COSE's Com

mon Development Environment would ultimately comply with OpenStep In order for this to happen, however, Sun must entkey COSE members to sign on, which is not a foregone conclusioo, analvata said. The Sun/Next alliance

> is expected to speed time to market for an objecthased version of Solnris by two or three years, SunSoft officials said. Although the partoers did not announce ship doles. SanSoft President Ed Zander claimed they would get "off the ground" with their offering well before the middle of 1965 to coincide

with the appearance of

both Taligent's and Mi-

crosoft's object environ

veloper's version of its Distributed Ob-

ject Environment that includes low-level

object services, an object broker compli-

at's Steve Jobs (left) and Sun's Scott eare onserts of each other's desire

ant with the OMG's Common Object R onest Broker Architecture and an inte face definition language. The addition of NextStep's development environment will enable the Mountain View, Calif., developer to market a complete comcial offering, industry analysts said.

Developing object-based technology to create applications quickly is not something to be taken lightly - what Next has done is nontrivial. Sun could not

reinvent it," said Rikki Kirzner, an analyst at Dataquest, Inc. in San Jose, Calif. ome developers looked favorably on the announcement, saying they like NextStep but have been coocerned about its longevity and broad appeal. "We've been interested in developing to Next for a while, but there simply wasn't the market to justify it. Now we'll plan to move shead" said David Knight, vice president of marketing at isocor Corp.

ot quick to sign one Sun users reacted favorably but

said they are waiting for definitive prodannouncements before they sign on. "NextStep is a very powerful object oriented development environment, and this is welcomed news," said one source in information systems operations at a major Wall Street brokerage house, "But we don't know what the details are, and we'll have to see - they're going to use Objective C, which means additional ning for which we'd have to budget.

object environment with Solaris There is a fundamental flow when the user has to choose a particular operating system to adopt the product," said John Rymer, an analyst at Patricia Scybold Office Computing Group in Cumbridge, Mass. "Others such as Taligent are pack-aging their technology so that it targets nultiple operating systems and not just one. Some users may look at this and say 'If I have to choose between NT and Sol aris, I'll say thanks but no thanks.

But some industry analysts que

tioned SunSuft's strategy of bundling its

Novell to add digitized video to NetWare

Novell, Inc.'s Multimedia division is expected this week to begin shipping software that will allow Microsoft Corp. Video for Windows users to ad live moltimedia presenta tions from a NetWare server. The alter native is to stuff local PC hard drives with digitized video files that take op about 16M bytes per minute, according

to a spokesman for Novell's Natick, Mass, based division. Novell Multimedia, formerly Fluent, Inc., will ship Netare Video 1.0, software that arms NetWare into a full-motion audio/visual server for Windows clients, said Paul Armstrong, a product line manager at the firm.

The product does not supnort videoconferencing since Il does not provide a way for andiovious) material to be delivered in real time over an loternalwork backbone. trong said. However, it will enable a NetWare server to store multimedia material in a file and send it to a remote server, which can deliver the

rial in real time to local PCs. NetWare Video can take any file built

leaf format and "play it directly in a client" over a LAN, Armstrong said. NetWare Video 1.0 is said to support rates of up to 30 frame/sec., the speed used for television video

The software can lower the rate of ion according to truffic loads on the LAN and the frame speeds a ent PC can handle, Armstrong said A 386-based 50-MHz PC can handle 15

Rose-colored glasses \$201M \$497M *Futireated

> frame/see, while an Intel Corp. Pen-Hum box can handle the upper limit. However, users are likely to be more concerned about clogging up their server disks than overloading the LAN either NetWorev3 11 or 4 91. medium, which is getting faster all the

Gleun Fund, president of the Boston Area Novell Users Group and network ninistrator at a large Northeast defense electronics contractor, "Full-motion video takes up a lot of [disk] space: we have cough problems lensuring server especity) for regular DOS and

Windows applications."

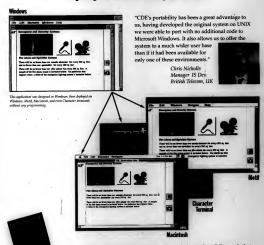
NetWare Video works with the mu media editing, generating and embedding tools that come with Video for Windows, such as Object Linking and Embedding (OLE) 2.0, Armstrong said. Users can use OLE 2.0 to integrate vidco ctips with an application, such as a spreadsheet, or electroote mail. "So you could send out fan E-maill ootiee to your sales force. 'Here's a pew prod uct. In video off what it looks tike and Joe Sehmo saving Go out and sell it. Upcoming versions of NetWare Video will support other client environments. A likely candidate is App Computer, Inc.'s Quicktime. At thus time there is no equivalent multimedia

user interface standard for Unix, Arm-Video t.6 will be available in five., 10and 25-user packages, priced from \$100 to \$200 per sent. The product will run as a NetWare Loadable Module on On the tube

Correction

Due to a writing error, an Inside Lines item in the Nov. 22 Issue misstated He lett-Packard Co.'s computer fiscal 1993 revenue. It is \$15.5 hillion.

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01993 Oracle Corporation



An industry turned topsy-turvy

ons, but that was not the only thing that seemed inside out at this year's Comdex.

San showed neers on SPARCatations how to move data from windows into a Unix program.

BM stole a march on Apple and seized the mantle of minaneing the user interface. The company said it will make com-puters accessible through wise, touch, pen, gestures and proba-bly beseechful prayer, although it neglected to include the inter-

Gallagher, the comedian, showed everybody how to laugh at IBM's expense. That is, straitlaced IBM paid him to make fun of e company. His off-color jokes, be said, were "just another shade

If the world seemed upside down in Las Vegas, it's just another sign of an industry in deep ferment. Old enemies showed up as

allies, while old friends eyed each other suspiciously. IBM and Apple. for exam-ple, showed PowerPC prototypes speeding through ap-

lications, lending redibility to the RISC architure as a competitor to

Many observers think intel and Microsoft march in lockstep as they garner the fits of the desktop revo tion. Indeed, they were arm in arm Monday as they urged pard makers to follow ug-and-play" stand



at the Sahara Hotel. But Mi most spokesman Carl Stork had hardly left the room before Penm marketing manager Curt Nichols said, in response to a ques-m, that the portability of Windows NT was not to be taken too sly: Sure it could run on non-intel platforms, but Windows NT "is not in the mainstream" like DOS or Windows, so its appear e on other platforms wasn't going to undermine intel.

Underneath the surface tension, deeper currents were at work For one thing, there were few open system evangelists in evidence, d there was little need for them. What manufacturers are coming up with today is often more open than their predecessor prodocts. IBM spokesmen, for example, said PowerPCs will be available in mid-1994 to run Windows, ALX, Solaris, Taligent, the version of (1872 known as Workniace/US, and Windows NT. New Macintosbes based on the PowerPC will run all existing Mac software and at the me time they will be able to run Windows applications under signia Software's emulation program.

Nichols explained to his Sahara listeners that smart people wouldn't want to do that. Running an application in emulation was like reading a French novel and "translating it word for word from ch dictionary." But the Windows applications I new running on a Mac PowerPC tooked like they had thrown the dictionary away. They run at 386, perhaps 486, speed. in Comdex technical sessions there was a growing awareness

of cross-platform development environments, one-time development of an application for multiple graphical nacr interfaces and mateways to multiple SQL databases. Technology with the portality heilt in, such as Windows NT and the PowerPC, will automat swing the door to open systems a little wider.

At the same time, the scramble to be where the growth is has led to slippery alliances and topsy-turry arrangements. At times, what used to be up was down and what used to be hot was sudd

When asked about the operating temperatures of future Pen-um chips, the redoubtable Mr. Nichols didn't besitate: "There is no problem with heat dissipation whatsoever. The Pentium pro-cessor actually runs cooler than the 1696." It runs cooler, that is, if you package it in an intel-approved manner. Ab, could we have the spees on that fan, Mr. Nich

ork in Composterrarce of Custocheles Leditor. His MC1 Mail address in 575-2737.

Digital, Lotus talk groupware pact

Digital Equipment Corp. and Lotus Develo ment Corp. are negotiating an agreement that will have Lotus develop Alpha AXP versions of its Notes groupware software for Digital to resell. The two companies are also looking at in-tegrating Notes with Digital's Link Works appli-

ention framework software. Howard Dresner, a program director at Gart-ner Group, Inc., a consulting firm in Stamford Conn., said the Notes support could give Digital

a fulcrum to use in selling both Alpha syste and LinkWorks. Meanwhile, Lotus would get access to the large All-In-1 installed base through Digital's own sales force. Lotus really wants to get Digital as a chan

net" for Notes. Dresner said, He expects an agreement in the first quarter of 1994 and expects Notes for Alpha shipments into next year Dilin Phadke, LinkWorks group marketing manager at Digital, confirmed that the compa nies are in negotiations and said a first-quarter

announcement "is possible. Phadke said Digital and Lotus "are still eval unting what we can deliver in what time frames." He noted that some capabilities for supporting Notes under LinkWorks might be

Dresner said be expects Lotus to agree only to "rudimentary" integration of the two prod ucts, such as supporting LinkWorks as an alternate repository for Notes objects. "Lotus doesn't want to do saything to screw up its

Notes business, nor do they want to play favor-Ites," be said. Lotus declined to comment

Integrating groupware
While Notes and LinkWorks are both put in the upware category, Digital is positioning

LinkWorks as a tool for integrating various ap plications across workgroups. "If you really look at the products and their target markets, ey're not the same thing." Phadke said Conrad Wiser, manager of Martin Marietta Corp.'s data center in King of Prussia, Pa.

agreed Notes and LinkWorks are more comple entary than competitive. He said an Alpha AXP version of Notes would eateh his attent "We'd look at it right up front, absolutely Integrating Notes and LinkWorks would e for an even more interesting product offering, he added. "We're very concerned about stion] integration. That's one of the at difficult things in software development.

Ambra to flex notebook muscle

10 to 2- by 2.5-6

By Stephen P. Klett Jr

Ambra Computer Corp. today will unveil two low-end notebook lines designed to take on Gateway 2000, Inc., Toshiba American Information Systems, Inc. and - to a degree - parent company IBM.

ok (SN) and Notebook (N) se ries are based on Intel Corp. 1486 micropro sors and cost from \$1,399 to \$3,998. The series have battery lives of two and 2%bours, respec-

tively, Ambra said, and are stated to ship

said Ambra's points features in line with Toshiba's recent intro ductions [CW, Nov. 81. but

some BY:CE skeptical of its shility to deliver the ma "On naner, (the notebooks) are very attrac

tive and aggressively priced," said Rane Giusto, an analyst at WorkGroup Technologies, Inc. in Hampton, N.H. "But the problem for Amben has been supply," he said. "The big question remains of whether they can deliver - in quantity - oo the date they say they will."

Ambra's first notebook offering - the NC425 - faced backlog troubles right out of the gate ICW Ang. 30). The Releigh, N.C., company made justments to avoid further backlogs, inch ing more optimistic forecasting and signing a

w manufacturer, which Rich Ritzema, pr

uct manager at Ambra, declined to name. Also, by offering passive-matrix versions of the high-end N series, Ambre hopes to avoid

backlogs associated with the high demand for active-matrix technology. Ritzems said Ambra is targeting Gat and Toshibs, but it could win some IBM custom ers fed up with waiting for IBM's ThinkPad 500. While Ambra has a price/performance ad-

mance choices at

vantage over Gateway, analysts said Ambra Toshiba, which they said holds

the upper band because it does most of its own

said they were impressed with the products' were wary about moving to the Ambra brand

The new lines sound good, but they strike me as being the absointe low end for IBM so I probably won't look at them," said William I. Lodge, project manager at The Turner Corp. in New York

Other users said they may look at the ma-'Ambra bas as much credibility as any other

rand and being part of IBM rather than some other third-tier vendor certainly helps them, said Donna O'Driscoll, assistant vice presider rate information systems at New York surance Co. in New Yo



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NCR unwraps voluntary leave program Following its announcement last month that it will trim its worldwide work force of 54,000 employees by I'm is worknown work in or of shoot and it is to 15% to 15%, NGR Corp. last week unwelled a voluntary separation program for 25,000 employees in the U.S. Officials at the Daylon, Ohio, computer arm of ATAT bave not yet estimated the charges for the program. which will begin in the first quarter of 1994

lealth providers urged to go with X12 A bealth care industry task force, filling in many of the technodetails missing from the Clinton administration's health care reform legislation, last week called for large insurers, medical groups and employers to implement ANSI X12-based electronic billing and payment networks by the end of 1994. The Workroup for Electronic Data Interchange said basic 12 standards are in place for electronic medical X12 stan claims, and it will publish implementation manuals by mid-1994 for doctors, hospitals, payors and electronic data interchange vendors. It remains to be seen whether the industry can meet the aggressive dead-

Developer arrested for installing virus nt of a small New York software developer firm was arrested last week for compoter tampering. He allegedly had one of his technicians install e Trojan horse computer virus into one of his client's systhem to ensure that the customer would pay for over-due licensing fees. Michael Lofaro, 29, president of MJL Design, and John Puzzo, 22, an MJL technicism, were both charged with first-degree computer tampering, a felony charge that carries a maximum sennee of four to unyon years' imprison

Suit against Apple is thrown out

A California state court has thrown out a wrongful-dismissal lawsuit filed against Apple Computer, Inc. by former Executive Vice President Albert A. Eisenstat. The 63-year-old Elsenstat alleged that he was forced from his post at Apple earlier this year because of age discrimination. The state Superior Court in San Jose, Calif., said a mediator found the allegations un-supported by the facts and dismissed the charges "with projudice," meaning they cannot be refised. Apple and Eisenstat were unavailable for comment.

SynOptics switch gains WAN links

cations, Inc. said it will today nounce wide-area interfaces for its LattisCell renous Transfer Mode (ATM) switch, which began shipping in August. Today a workgroup switch, the LattisCell, will gain direct interfaces to T3 (45M bit/sec.) and Synchronous Optical Network (Sonet) networks, said John Jaeger, product tine manager. SymOptics also announced ATM adapter cards for Sun Microsystems, Inc. Stus computers. A fiber caretia \$1,705, and an unableided twisted pair connection will cost less than \$1,300. Jacger said.

SHORT TAKES Good Squire, bend of New Business Oportunities at Oracle Corp., stopped down last week, a month after Oracle moved Squire to a less visible on than his former post as chief executive officer of International Operations. . . Richard Hackborn. whett-Packard Co.'s executive vice president and head of its Computer Products Organization, will re-tire, effective tomorrow, Richard Belluzzo, who was reutive vice president and general manager of the Hardcopy Products Group, will take over but will contime to oversee HP's printer business in addition to Computer Products' PCs and PC LANs. More news aborts, page 16

Cisco 9.2 upgrade may cost

By Josnie M. Wexler

wWith the next release of Cisco Sys tems, inc.'s router softwere icoming on the horizon, the day is quickly approaching when some veteran custom-ers will have to decide whether to invest millions in new router hardware.

Claro's Release 9.2 is expected to ship early next year bearing key features that allow petworks to scale up in size, according to beta customers and others familiar with the 9.2 blueprint. These include faster routing table updates, more conhisticated IP address management abilities and enhanced tunneling and

X 25 encapsulation techniques However, 9.2's code size is "so big, it woh't run on the bulk of Cisco's installed have " said one 92 bets customer who requested anonymity. The user, who runs a medium-size Cisco network, said he is looking at a 85 million upgrade in either mory or new routers so he can take advantage of 9.2

Another 9.2 beta customer said be has ndt seen this degree of bardware strain, but poted that his test version does not include Enhanced IGRP, the faster version of Cisco's routing table update algorithm expected in 9.2. The user, who also percent not to be identified did say that Cisco will eventually run into a problem with the old processors." The hardware latform "seems to have a 2M-byte limit"

on the size of the code This is an issue "most Cisco users will face in the next 12 mooths," said Val Sribar, program director at Meta Group, Inc., a consultancy in Stamford, Conn. Sribar said while the horsepower problem tends to surface across many vendor product lines today because of rapidly changing technology, Cisco's continued sales of its former high-end

7000 platform last January [CW, Jan. 18] chasm

Cisco, bowever, said it does not pit force users off of old platforms in favor of the 7000 and other compatible 7000 fam ily members rumored to be in the works et the high end, midrange and low end.
"Most users are positioned to grow,"

said Senior Vice President John Cham hers. Most AOS+ routers sold in the past 18 moeths shipped with the required memory upgrade, he explained.

es and minuses

The 7000 brought users some of the increased capacity, redundancy and hotswappability features for which they had been clamoring. On the flip side, the new model did not represent a quantum architects ral leap in performance, limiting its future-proofing appeal, and intro-duced a new form factor for interface cards that rendered older routers' cards incompatible with the newer platform.

These changes and the memory factor could open a door to vendors looking to penetrate Cisco's installed base of about 125,000 devices, since some users, when faced with expensive upgrades, will be more likely to reevaluate other vendors. The fact that it is such a substantial

investment to upgrade means we'd stop and take another look at the marketmunications supervisor at McDermott, inc., a Cisco shop in New Orleans.

Ron Cramer, e systems programmer at Carroll, Inc. in Minnespolis, indicated be might not be motivated to upgrade at all see of the expense and the labor involved in changing his widely distributed

'I'd have to be sure of the advantages of the new code first," he said.



White Cisco would

ment test week or the alleged said it will include the

• Enhanced KERP. A faster version of

Cisco's proprietary IGRP routing algo will minimize delays that would otherwise multiply out of contra networks. Cisco said support Enhanced IGRP by mid-1994 though observers expect it earlier in t year with q.2. • IP mapping. For arries with unique IF address schemes, 9.2 will reportedly translu addresses for

wide-area networks with other IP users. Expected to allow the encapsulation of am protocol within IP all

topical network.

Informix resets DBMS By Kim S. Nash

Informix Software, Inc. last week unveiled a rebuil wersion of its OnLine database to run on symmetrical multiprocessing machines and, eventually massively parallel processing (MPP) machines.

As expected, informix detailed features and release schedules for multiprocessing support, dabbed Dynamic Scalable Architecture (DSA) [CW, Nov. 15]. Sequent Computer Systems, inc. co-built the DSA with Informix and will be the sole hardware provider

of the technology for six months after it ships DSA will be rolled out in the following phases ► OnLine 6.0, which ships Dec. 20, will have some pa.

allel functions such as indexing and sorti Dolling 7.0, due out early next year, is expected to contain full parallel processing support, such as the ability to split and answer user queries across sever al CPUs. Support for loosely coupled machines is also expected DaLine 8.0, due out in 1995, will take informix to

MPP machines, such as those from Kendali Square Research Corp. or NCR Corp.

A key piece of DSA is built-in on-line backup and ery in a multiprocessing environment, part of

which lets users copy and restore selected parts of a database table, rather than an entire table. That apeach could save time for users with multigigabyte databases, said Chris Le Tocq, senior analyst at Com-puter intelligence/infoCorp in Santa Clara, Callf. Informix claimed that because OnLine 5.9 sports a ew 32-bit multithreaded structure, users will have as trouble migrating to and administering the product than they might with other multiprocessing databases. By contrast, Oracle Corp.'s multiprocessing tures are add-one to a uniprocessor product and rely partly on the multithreaded functions embede in hardware and Unix and other operating systems

No big change for users

However, such differences should not affect nears or database administrators such, analysts said. Symmetrical multiprocessing machines and MPP

platforms are an option for users who want to move several-gigabyte applications off of mainframes. But migrations have been scant, partly because relational database makers could not provide exterpris strength products for that hardware, analysts said ow, with announcements from Informix, Sybase no. and Oracle, symmetrical multiprocessing ma chines and MPP "could be the platform for high-call ber client/nervor," according to Herb Eduistein, and ber citent/server," according to lyst at Encild Associates in Pote

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ORACLE

MAPI

CONTINUED FROM PAGE 1

back-end services, including popular LAN and bost-based systems. The disad-

vantage is it limits users to Windows saging solution might work for us, but in inant [here]. People outside of our bead quarters still have DOS-based machines," said Brian Moura, an assistant city manager for the city of San Carlos,

Microsoft plans to wrap MAPI 1.0 into the upcoming Chicago version of Windows and the upcoming Cairo version of Windows NT, according to MAPI product ager Chris Williams. Also, the MAPI kit will allow developers to add the ex-

printing solutions are

tended MAPI capabilities to current Windows and NT versions.

e messaging options for front-end clients and back-end services, and a messaging middle layer that

includes limited transport, message store and address book functions. Previ ously, Microsoft made available only a "simple" set of MAPI client APIs that required developers to use Microsoft Mail

Of course, Microsoft will offer MAPI pliant front- and back-end prodnets. It will ship an electronic-mail o code-named Capone, free with Chicago the second quarter of 1994. Sepa and also in the second quarter, it will of fer its NT-based Enterprise Messaging vices, Williams said.

However, plenty of other vendors have committed to adapting their products to plug into extended MAPI:

Isocor Corp. is working closely with Microsoft to provide back-end services that would allow MAPI-based electronic data interchange clients to access global

messaging services will natively support A WordPortect Corp. official said the pany plans to enable its Office mes-

saging suite to act as a MAPI service pro-*Lotus Development Corp. said its up-

rili be a MAPI service provider. leyond, Inc. said it will develop its Bey dMail software as a MAPI client.

Star Enterprise, a Houston-based petroleum refining company and a dod ed Windows shop, uses simple MAPI to distribute database reports using Microsoft Mail "If outside products are already mail

enabled using extended MAPI, that's se it prevents as from having to modify them to do it." said systems an

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OS shifts draw developers' ire

ecent adjustments to IBM's Pers Software Products group's delivery lans for its Workplace OS variants is sing some OS/2 developers to push ack their own development schedu At the recent Comdex/Pall '90 show RM officials said OS/2 on Intel Corp.

sed platforms and AIX on RISC-based that Workplace OS would not replace them any time soon

Quaversely, some developers said they thought Workplace OS, a portable ver-sion of OS/2 based on IBM's microkernel technology would play a more strategic

age "tells us we should give It less priority because they can't give us any hard and fast plan to write to," said requested anonymity

We sense Workplace's function is getting pushed out further in the cycle. and that was not our understan couple of months ago," said another OS/2 developer. "Maybe they think [Windows] NT is becoming a non-issue and they can hold on with ATY Rus that might be a risky strategy

Company line In response, IBM officials last week said

what they have said before: Any and all technical investment in OS/2 and AIX can be carried forward to Workplace OS If developers write 32-bit OS/2-compatble applications and gradually integrate technologies from the OpeoDoc consortium, such as IBM's Systems Obsect Mod el, their migration to Workplace OS

Personal Software Products wants to get Workplace OS up and running on Intel first tocreate a stable environment on which to port its RISC-based PowerPCsed systems, which are due by the mid-

die of pext year, according to devel familiar with IBM's plans. The latter platform is where they bope to make the m market impact

While it will be up and running on intel first they want to productize on Present Caret Canother developer said Personal Software Products is scheduled to hold a two-day briefing for develers this week in Boca Raton, Fla., on a Workplace OS Release 1.0 functional appdate," according to a letter sent to some developers. The company is also expected to by out specific plans for

what versions it will rollout and when.

IBM officials two weeks ago said they would first deliver Workplace OS with a Unix personality, or look and feel, for the Intel platform, it should enter beta testingeither next mouth or early next year. ext. IBM will deliver a beta version of Workplace OS with an OS/2 personality for its RISC-based PowerPC-based PCs. probably in the first half of pext year

Later in 1964, the company will produce a version with a Unix personality on ton of OS/2 for the PowerPC and then a version of OS/2 for intel systems with an AIX nality layered on top.

Earlier this year, company officials in-icated Workplace OS would reside both on servers and clients.

More recently, however, James Canno vino, IBM's senior vice president of strat-egy and development, said the operating system would likely debut on the upcom-ing PowerPC-based desktop systems delivered by IBM's Power Personal Systems ision. Those systems are due about the middle of next year.

IBM pumps client/server

CONTINUED PROM PAGE 1

Although IBM spokesmen found to comment on the fort ing products, details were avail

IRM's starter kits will be intro aced in the first quarter of next year and will feature hardware and software from IBM and other ors to bandle tasks such as systems management, decision support and distributed databastion Architecture (SAA), which es, according to sources close to

'As customers move to check server, they will know that this particular set of products works ther, and they won't have to do er own testing from scratch," said one source familiar with the

About four or five such starter kits are planned; the testing and integration work is being done in alaboratory in Endirott NY, under the spices of the Client/Server Com ort last Thosa kits will then be red worldwide to IRM's open is centers, which provide ervice and support to IBM sales offices, as well as to customers

The blueprint will break out be IBM will tie together various pieces of client/server technology from multiple vendors based on open rds such as the Open Software Foundation's Distributed Computing Environment (DCE). ants who have seen it com pare ODCS to a "Chinese menu" sch. For example, any computer that supports DCE can play within the IBM scheme of things.

Within ODCS, IBM will detail what it will support in the areas of systems management, database management and application development, among others. Objects

who was briefed by IBM. In that

→ Mensure Queue Interface

and multimedia standards reportedly play hig roles across the lines. The blueprint is "definitely not IBM-centric," said Peter Schay, a tner Group, Inc. vice president

Big Blue print

* Common Open Software Environment.

The Open Software Foundation's DCE and Distributed Management Environment.

ensection proceeding environmenta nging from IBM's CICS to Transac's

IBM paveiled in 1967 as a means of

tying together its disperate prod-

This does not smell, feel or look

like SAA," said Frank Dzubeck,

resident of Communications Network Architects, Inc. in Washing

ton "IRM got its hend serrored on

IBM is downplaying ODCS - up-

in portability quides and database

sions of products - including a nackage that backs up LANs on a mainframe - that support the blueprint. Duni role

Another reason IBM is not making a hig deal about ODCS is that architecture is not all that important

der development for at least two

years - because of the negative

feedback it received from its fail-

ure to fulfill all the promises made

in SAA. This time around, sources said, the blueprint will be an-

nounced when there are new ver-

in today's world. "I'm more interestcd in what's delivered rather than what's

talked about in theory," said Tom Loane vice president at Alamo Rent A Car, Inc. in Fort Lauderdale, Fla "I get less inspired with strategy because the world is changing so fast."

Nevertheless. ODCS is expected to internal IBM developers know which stan-

dards are important to their customers and to belp eustomers understand where IRM is heading with allegatespace in

the next three to five years. "Strategy is important to us because we view the acquisition of technology to be a long-term investment," said Robert Lukas, assistant vice president at ITT/Hart-

ford in Hartford, Conn. "Unfortunately," Lukus adde you can't obvievs be assured that the strategy is long term."

Getting started

Enterprise Client/Server: The New Organization







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with customers, he's seen what works, and what doesn't. Hear what he has to say in a remarkably candid recorded conversation. For your copy of "Client/Server And The New Organization," call 1-800-SYBASE-1.

Wall Street consolidates its assets

At the same time as Wall Street is investing hundreds of millions of dollars in its techniastructure and making way for new archi-ures, it has been raking in similar amounts of savings by consolidating data centers and

A drastic approach at Merrill Lynch & Co. has resulted in a savinm of \$100 million - 30% of which was realized by cutting 900 positions - over the course of a justcompleted five-year data cen didution project.

Rival Salomon Brothers, Inc. has been consolidating its big iron in a shift away from host-based ssing as part of its move to Unix-based distributed comput-ing. This five-year effort has so far saved "tens of millions of dollars," but it has cost only 9% of the inforsystems work force its jobs. That is because Salomon red most of its employees in



solidated four IBM mainframes into the two that are situated at its Rutherford, N.J., data center, accord ert J. Cassiliano, senior operating officer responsible for management of the facility

In the past two years, Salomon has phased out 33 Prime Computer, Inc. minicomputers once used in its London, Tokyo and New York offices for pressles modeling and analytics. In addition, two IBM 3090 mainframes and a slew of IBM 4381s used for analysis and processing were scrapped and replaced by more cost-of



feetive Unix workstations.

on Brothers' Robert Causiliano: 'The people we have are our biogest strength

Purther plans call for phasing out an IBM 3090 600E by year's end and reducing the capacity on its remaining ES/9000 942 machine

from 225 MIPS to 165 MIPS by 1986. That effort will be assisted by off-loading front-end develent and processing onto Sun Microsystems. Inc. workstations using PC and Windowsbased tools

These efforts have conbled Salomon to cut its mainframe support staff by 115, or about 9% of its 1,300 IS staffers worldwide. So far, 95% of the remaining IS staff has trained on Unix.

People power
"We don't want people leaving because they're
not trained on the technology. The people we

have are our biggest strength," Cassiliano At Merrill Lynch, data center consolidation have gained fame as the "red dot program The tag comes from Merrill Lynch Chairman

Daniel P. Tully's penchant for placing a red dot on, and ordering the removal of, any piece of equipment that cannot be cost-justified. errill Lynch has consolid sted from 14 to

two data centers in the past five years, a move leted last April. However, in the past three years, Merrill Lynch has increased its MIPS capacity by 100%. from 725 MIPS to 1,450 MIPS, according to Howard P. Sorgen, Merrill Lynch's senior vice presi dent and managing director of global informs

tion services. "At one point, we thought maybe we could tuource all of our data centers to IBM. Well, they came back and said they couldn't do it any better than how we're doing it," said Edward

mes, 13 Pr dist of EM 430

while adding in m than 3,000 Unio workstations. Iomon spent \$250

o-story, 1,000-580 Unix trading bebert J. Cassili

officer resp non's Ruths K.L. data cente

Brokerages

CONTINUED FROM PAGE I ons at Merrill Lynch, for examp

recentralized portions of that company's information systems division to regain cost controls on departmental information technology projects. "I know every dime that's spent in this firm," be said.

"If you want to get a feel for what the pulse of technology is, financial services is where it's at," Grant said.

Take supercomputing. Where eise might one find a company that already has three MPP machines installed and is about to take delivery of a fourth? Prudential Securities. inc. has two 32-processor intel Corp. 1860 machines it uses for mortgage securities, portfolio management and risk manage-ment evaluations, as well as an intel Puraon MPP system deployed to conduct quantitative analyses of mortgage securities. In with IBM about ATM ember it will receive an IBM SP/1 ma-

chine to determine arbitrage opportunities for its cus-tomers, according to David Audley, director of financial des at Prudential The MPP machines "allow Prudential to keep up with

rapidly changing market conditions while constantly ng complex securities portfelios that they dn't otherwise do with maint es," noted David Frankel, director of technology at The Smaby Group, Inc., a Minneapolis-based high-performance computing market research firm.

Although several brokerages, including Morgan Stanley & Co., are still running 4- or 5-year-old Y-MP su-percomputers from Cray Research. Inc. to perform inth market analyses, other firms such as Fidelity In-

vestments, Inc. are reaping cheaper costs-per-GFLOPS by shifting to MPP machines such as Thinking Machines Corn's Connection Machines. NCR Corn's 3800 and Teradata Corp.'s DBC/1012 systems, according to Derek Stubbs, a consultant at Advanced Forecasting Tech-

nologies, Inc. in Vicksburg, Mich. That kind of benefit had Fidelity plunking down \$3.9 million earlier this month to upgrade and expand its NCR Teradata DBC/1012 MPP-based decion-support systems

Receipe the hispest bucks on Wall Street these days are being made in several emerging markets, including derivatives, portfolio management and risk management, it makes sense that derivatives leaders are among the most avid technology consomers.

For example, Goldman, Sachs & Co. among others, is revolutionizing its trading operations by creating "middle-office" operations. These are functional environments that integrate distribute Unix-based client/server trading floors

tions. This is done using object-oriented programming tools such as Powersoft Corp.'s PowerBuil ing to Deborah Williams, an analyst at The Tower Group, a Wellesley, Mass., financial services informstion technology consultancy.

The ability to run arbitrage schemes and come up with new derivatives products has been almost wholly dependent on a firm's use of technology," Williams sale But not all advanced technology projects have been

For example, Pirst Boston Corp. spent \$200 mil on a failed back-office restructuring project based on ct-oriented programming, called Newark 2000, in the late 1980s. "It's an example of a company that tried

Goldberg, executive vice president to redo its whole back-office system and bit off mor

than they could chew," Williams said But the First Boston project was not a total flop. In 1990, the brokerage spun off the object-oriented group into Cary, N.C.-based Seer Technologies, Inc., which is

now a \$35 million software developer Brokerages have also led the way in deployment of Unix-based systems (see story above) and in the production use of neural networks and artificial Intelligence tools to analyze and forecast derivatives and future prices of stocks, bonds and securities.

Already on board
On the distributed front, most brokerages, including
Prudential, Fidelity and Merrill Lynch, are well-entrenched in Unite-based ellent/server environments. The bulk of these systems are Sun Microsystems, Inc. based and are used in mutual funds forecasting, acng to Stabbs.

Merrill Lynch, at least, is looking at Asynchronous Transfer Mode (ATM). Howard P. Sorgen, senior vice ident and managing director of Merrill Lynch's global information services, said the firm has been talkng with IBM about its ATM fast-packet switching technology plans. Although Merrill Lynch has not committed to any vendors, Sorgen said Cabletron Systems, Inc. and Cisco Systems, Inc. will be the brokerage's respective hab and router partners of choice when the compa moves to ATM by mid-1994.

Though Wall Street brokers of the advanced technology frontier, the use of analytical tools is not restricted to lower Manhattan. Some of the bottest action is occurring in Japan.

Yamaichi Securities Co. in Tokyo has been using fun zy logie technologies to model the U.S. economy and forecast the direction of interest rates here to deterdecisious in specific vertical markets

Brokers fight fraud with IT detectives 'eliminated fraud, he sold it

The use and abuse of technology by por er brokers seeking to line their pockets with money obtained through illeg actions is the underside of Wall Street's love affair with technology. Perhaps fighting fire with fire, firms such as Prudential Securities, Inc. and Salomon Brothers, Inc., both of which

have been rocked by securities seands have tried using information technology to help brokerages detect incidences of

There are no guarantees, however. on, which has been using its seen rity tools for 10 years, apparently was unable to thwart overbidding on treasurv spetions by a few traders in the mid to late '80s.

In Prode tial's case, the brokerage was nailed for practices that oc curred in the 1990s prior to putting security measures in

Without ad mitting or deany CIOBILA Proviential is mo Prodential Setoring trade activity

curities last month shelied out more than \$330 milli to settle charges that it improperly sold more than \$7 hillion in limited partner-

Time to atone

For the past three years, a seemingly chastened Prudential Securities has been using programs written in Cobol CICS on its IBM mainframes. They are used to monitor trade activity among its stockbrokers, according to Bill Anderson. Prudential Securities' executive vice president and chief information offi

One of the systems, called Shortstop, conducts on-line, real-time checks of trading activities before the trades are based on predefined anthorization limits per stockbroker.

A system called Backstop was designed to identify futures (commodities) activity that exceeds predefined dollar ons. Exceptions from both systems go to regional and branch manent for review and/or approval, as well as to the home office margin department, which helps ensure the effectiveness of the process.

Regulatory requirements Brokers who buy and trade stocks on the New York Stock Exchange and other exnges are required by Securities and change Commission regulations to Exchange Con have Series 7 licenses. The registrations

for those licenses are kept on-line at Pru-dential Securities, Anderson said. But

mix of Windows-based PC and Unixbased software, written in-house, to identify trading activity that would call

g, two indicators of trading that Frederick M. Krieger, chief compliance



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CompuAdd CEO resigns

CompuAdd Computer Corp. said Bill H. Hayden is stepping down as chief executive officer of the Austin, Person-based mail order company, which recently merged from Chapter 11 bankruptcy protection. hard W. Krause, CompuAdd's president and chief operating officer, will take on the duties of CEO until a successor is named. Hayden's departure comes on the beets of Communded's announcement that it has begus prefusitary merger talks with Zeos internation-at, inc. [CW. Nor. 8]. Hayden will reportedly turn his attention to running his point-of-sale noftware com-nany CompaAdd Information Services.

DOD selects development contractor The U.S. Department of Delense last week awarded its integrated Computer-Alded Software Engineering (CASE) contract to Lockhoed Missiles and Space Co. in Sunnyvale, Calif. The 10-year, \$400 million conract, which includes subcontracts to IBM, Hewlettckard Co. and others, will provide CASE tools throughout DOD for the development of Ada applica-tions. The tools will be integrated with Pentagon repostories of reusable software components. ICASE is a corneratone of DOD's Corporate Information Man-agement initiative, a program aimed at cutting infor-mation systems costs while boosting IS effectiveness.

Aorgan Stanley names new CIO

Kevin Parker, who most recently headed Morgan Stanley & Co.'s Tokyo-based international equity derivatives trading group, was recently named manag-ing director and chief information officer at the New York-based brokerage. Parker's charter includes the restructuring of Murgan Stanley's front- and back-of-fice environments. Purker replaces managing direc-tor Gary Goelirks, who is now in charge of the comptroiler's office. Parker reports to Carter McClelland. the firm's head of administration and operations.

CA, American Fundware settle

Following a September Federal Court award of \$3.5 million to Computer Associates International, Inc. for American Fundware, Inc.'s misappropriation of CA trade secrets in the late 1970s and early 1980s, the two firms last week announced a resolution of the dispate. Under the agreement, American Fundware will pay CA an undisclosed amount of each plos a royalty on all its revenue over the next to years. Meanwhile, CA will continue to license technology to American ware for use in its PC Fund and Fundware PCd fund accounting program

le, Fujitsu to do multimedia packs Apple, Fujitsu to do multimeara pucas Apple Computer, Inc. and Pujitsu Ltd. have agreed

to develop compatible software for their respective multimedia piatforms to Japan. Under the agreement, Apple will license QuickTime to Fujitsu, and the two firms will develop a set of common software development guidelines that will enable independent software vendors to develop multimedia applications that will run on both Fulitsu and Macintosh comp

RT TAKES Oracle Corp. and Novell, Inc. said the first of several expected Oracle database and Novell operating system bundles will be in user hands by Dec. 18.... Computer Associates and Symbol Technologies, inc. have introduced ScanPac, which coms two new modules of CA's AcePac Plus Accounting software with Symbol's LaserTouch bar code scanners... Digital Equipment Corp.'s PC business unit has signed a distribution agreement with a Chnese computer company and is exploring setting up a PC manufacturing plant in China.

UK tax agency will outsource to EDS

Electronic Data Systems Corp. and Inland Reveoue, the UK's tax vice, said last week they expect to sign by April a 10-year outsourcing deal, worth up to \$2 hillion, for RDS' EDS-Seicon Ltd. subsidiary to take over information technolper services. But before it can close the deal EDS must first face questions regarding data confintiality and labor.

The announcement comes one week after Computer Sciences Corp. best out EDS for a tentative \$1 35 billion deal with British Aerospace PLC ICW, Nov. 22]. Computer riences also hid for the tax job. EDS plans to invest \$105 million

to purchase information technology equipment from inland and to hire 2,000 of its 2,500 information technology workers. About 300 workers would stay with Inland. Inland's information technology hudget is estimated at \$375 mil-

The two parties said they expect They were unspecific about the Nintendo

CONTINUED FROM PAGE 1 would have to spend implem

its own system Rogers said. Some 11 retail chains and three licensees have signed up to process orders and invoices in the next year through the Unisys systom executives at Nintendo and Uniso's said The EDI network ties into an electronic-mad octwork provided by General Electric Infor mation Services (see chart). "Sev eral thousand" orders have already been processed through it.

Rogers said. Rogers said condisclosure terms problbit him from identifying participating retailers and licensees. One source said Kmart Corp. and Woolworth Corp. have signed on. About 30 licensees are cted to sign on.

A Kmart spokeswoman said she could not confirm or deny particinotion Phone calls to Windoweth were not returned. Jim Mattecheck, a district manager at Unisys, confirmed that it retailers are using the system

About two-thirds of all Nintendo-made sames, includios its Jurassic Park title, were designed by licensees, who are responsible for distributing their products. Many of these companies are small outfits that cannot afford the investment to install and support EDI rctions among them, retailers and Nintendo, Ropers claimed

technology changes EDS would implement or whether EDS would une its own processing cen

A civil servant union at Inlan has valced its objection to the pact and is lobbying members of Parli ment and major British com io inicryene, contending that the arrangement undermines the confidentiality of mountains of financial and personal data that con nies and individuals provide.

We believe there's an ince-

risk to confidentiality," said Bill Hawkes, assistant secretary of the Inland Revenue Staff Federation. which represents most of the 2.500 information technology workers at inland.

inland stated last week that it and the British government "attach the greatest importance to safeguarding the privacy" of taxpayer information. An Int spokeswoman said Inland would retain ultimate responsibility for confidentiality and would use "leto complete the deal to stages gal sanctions" to punish any leal An EDS apokeeman respond

Rogers estimated that if licen

es were to set up a comparable

EDI system on their own, it could

cost them between \$20,000 and

\$500,000 each. While some have

rudimentary EDI systems, the Uni-

sys project provides considerable

sales administration, such as

that EDS customarily safeguards "very confidential, proprietary in-

The union was scheduled to meet with EDS last Friday, after ess time. Its first demand was for EDS to recognize the union as the representative of the information technology workers, Hawkes

They've avoided being union ized up until [recently]," said Merrill Lynch analyst Steve McClellan. Hawke said one positive sign is that FDS recognized the union in a ent deal with the UK's Drivers

d Vehicle Licensing Agency The EDS spokesman said EDS as no union workers in the U.S., but it operates differently in Europe, where "there are different regulations and different laws" rerding workers' rights.

Furman Selz, Inc. analyst Terry sinn questioned bow profits surcing deal might be for EDS once it meets various union nds. Government sector jobs are less profitable than private sector jobs, even without naion is sues, he noted.

on of handreds of thousands of cartridges on a yearly basis Ken Jones, director of inventory magement at Toys R Us, Inc. in Parsonus, N.J., observed that "a hefty percentage" of Nintondo bcensees are not tied to Toys R Us. through EDI and could benefit

from the program. "Without [EDI] the product is definitely slowed down in terms of how fast it goes out to the sales floor," Jones

Nintendo is charging each licensee a fee for each ourtridge it sells using the RDI system for ordering invoicing. pays a per-cartridge fee to Unisys. The ar rangement marks the latest twist in the move toward tying the price of outsourcing deals to (CW, June 21]. Rog



a design that lets the liceusee have a sophisticated hookup to retailers without spending a large in-vestment up front," he said. "It's provide more elaborate suppor designed to facilitate the distribu-

ers declined to na the fee amounts Charlie McMurtry a strategy manager

at Wal-Mart Stor inc. in Ber nville. Ark., sald be What Unisys came up with was was skeptical about the program poting that Wal-Mart already uses **EDI links with Nintendo lices** Bat Rogers said Fast EDI would

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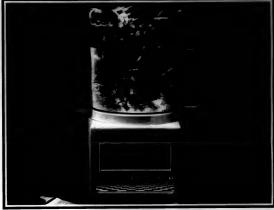
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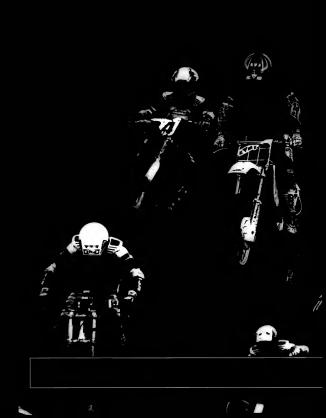
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Novell reaches for work-flow boost

By Michael Vizard

Novell, Inc. last week said it has signed a deal to bundle work-flow technology from Reach Software Corp. in Sunnyvale Calif with its AnnWare development

AppWare, which is scheduled to be available next year, is Novell's develop-

ment platform for creating NetWare spplications that will run on multiple platforms. By adding work-flow support to the kit. Novell is preparing for the next

generation of network applications. "A year from now there won? he an an dention that doesn't have work flow built in." said Brownell Chalstrom, president of Chalstrom Consulting in Alame-

panies to recognize this and put work flow in its standard application development platform However information systems direc-

tors should be cautious because Novell is still evolving its work-flow strategy for NetWare. "AppWare and NetWare aren't necessarily using the same work-flow

strategy," said Bruce Silver, an Industry an alvest at BIS Strategic Decisions in Normedi Mane

In fact. Novell is still determining whether it will compete or cooperate with Lotus Development Corp.'s Notes which will be available as a NetWare dable Module in the first quarter Lotus will position Notes as a work-flow ap plication development platform at its LotusSphere conference next week

Action Technologies, Inc. in Sunnyrole Calif will appoints at Loins-Sohere that it is shapping its work-flow offering for Notes Reach less week an nounced its intention to ship its Work-Man for Notes offering late in the first quarter of 1994, ViewStar Corp. in Emerwille. Calif., is also working to bring work-flow tools to Notes in 1994

A dubious advantage Industry analysts said Lotus has an edge

in the work-flow arena because Notes supports synchronized replication of dacon which allows means to more one ity share undates of documents. But many customers may opt for lower-end work-flow solutions. These would only incorporate AppWare applications that support Reach's technology running in conjunction with an SQL dat

For example, Pacific Gas & Electric Co. (PG&E) in San Francisco is looking to adopt Reach technology running on top of Notes, SQL databases, various cicetronic-mail systems and Banyan Systems. Inc.'s Vines

PG&F has not decided if it will use Reach on top of Notes or on E-mail. "Work flow tends to make more sense with a but then you have to factor in the additional cost of Notes for someone who dorun't have it aiready." said Alex Jauch a team leader at PG&E However, because Reach is suppo

multiple back-end systems, Jauch said PG&E will start going forward on workflow application development. "We'd like to have a trouble-ticketing system that could automatically punch something up to a higher priority." Jauch sald.

For its part, Lotus is hoping its alliances can shore up its work-flow presence before Novell and other rivals such as Microsoft Corp. can implement their

"There's a huge pent-up demand for work flow because Lotus has been out creating demand for Notes as a work flow platform." Chaistrom said. "But Notes by itself is not a very good workflow platform."

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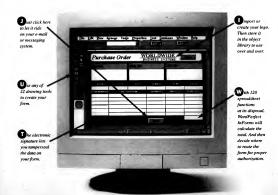
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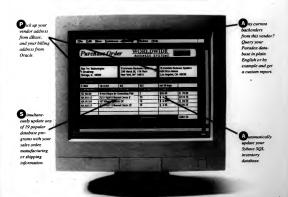


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INFORMS

Legent rolls out LAN-based backup tool

Learnt Corp. last week introduced data backup and recovery software that cre-ates local disk files for fast recovery and nds backups to a mainframe for tape-ued archiving and disaster recovery. Enterprise Storage Manager (ESM) is also able to recognize duplicate files

coming from multiple desktops or serv
McDermed, an analyst at Gartner Group,

ere so that univ one conv is retained, re
Inc. in Stamford, Conn. "You get high perers so that only one copy is retained, reducing storage requirements and network traffic, according to the Herndon,

Va., company. to another LAN server and sending disaster recovery [backup] to a mainframe

formance and the security of the mainframe backup facilities."

Star Enterprises, a \$7 hillion parts between Texaco, Inc. and Saudi Refining, is a great idea, and it's unique," said Gien Inc., is installing ESM at its Houst

hendquarters and will roll it nut to sites with thousands of workstations and servers. It will replace the ourrent practice of doing full server backups each night using 4mm and 8mm tapes and PCbased backup tools, said Tom Bernhardt, technology analyst

Bernhardt said that will allow Star to piggyback onto the existing disaster recovery program that is in place for Texaco's mainframes, which Star uses. The ability of ESM to do incremental backups, avoid duplicate backups and compress data will reduce storage and transmission costs, be said.

Existing PC hackup schemes are not robust enough, Bernhardt said. For example, Star lost data a year ago when a server failed and the company discov-ered that the backup software destroyed data after backing up 64,000 files, he ex-

Other users may be even more at risk, coording to Legent. "Over 85% of all LAN servers are not backed up," said Phil Carrai, vice president of the compa

ESM uses binary object technology, for which Legent is seeking a patent, to clim-inate duplicate data at three levels — server, site and enterprise. For example, if thousands of copies of new PC software are sent from a mainframe to departmental servers and from there to desk tops, ESM will recognize that it is getting the same data multiple times when indi vidual and users run their incre backups the next day. Only nne copy will

Worthwhile, but complex McDermed called ESM a "high-risk, high-

reward solution." He said the complexity of the product would require users to take great care when reconfiguring LANs. "This is something you get into stradually," he said, "Gain some experience with it before making an all-out

ESM comes with a prograu Automated Systems Operations feature that lets users automate their backup and disk-space practices, policies and

The software will initially sup OS/2, with plans to add support for No-vell, Inc.'s NetWare and Microsoft Corp.'s

Windows NT in 1994. Legent said it is considering a linky wersing ESM will be available on a limited basis

in December and will be generally available in April. Pricing starts at \$30,000, de or of LANs and the amount of storage.





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Software vendors converge on database market

IS managers to referee end-user query tool battle royale

Big \$\$ market

According to Gartner

Group, Inc., the

husiness information

systems arena is a

encompassing

decision-support

ontenn executive

By Michael Vizard and Kim S. Nash

It looks like information systems managers are going to have to arbitrate a showdown brewing between the PC software and relational database camps over who can provide the best tools for querying rela

On one side, relational database makers such as Oracle Corp. and Sybase, Inc., historically weak on PC platforms, plan to enhance their end-user ad hocquery tools with more graphical interfaces over the next several

On the other side, PC powerhouses such as Microse Corp. and Lotus Development Corp. have already stepped up efforts to provide relational links to their PC

entions through the addition of SQL links. Smack in the middle is a slew of small to medi nery tools companies that have already curved out niches to provide these tools. But as the market me-

tures, many of the functions previously associated with my of these tools are being incorporated into PC applica tions such as spreadsheets

and databases. As client/server technology matures, the number of endneer onery tools is proliferating, poted Peter Kastner, a vice esident at Aberdeen Group in Boston, "As a result, IS is

starting to put more cootrols on in order to limit the number of products they have to support," he said

There is a fair amount of convergence in the market, and it's a complete free-for-all. Some people are not go ing to make it," added Brent Williams, an analyst at instional Data Corn

With that in mind, many suppliers of ad hoc query tools seeking to insulate themselves from larger con stitors such as Lotus and Oracle are trying to reposi tioo themselves. Por example, IRI Software in Waitham,

Mass., which once specialized in executive informs

ware Corp.

systems, now portrays itself as a marketer of a prop etary multidimentional database designed spec to run ad hoc queries on data that has been imported

from an SQL database. Other companies taking similar approaches with multidimensional database engines include Comshare, Inc., Pilot Executive Software, Kenan Technologies, Inc. and Arbor Soft-

But does it have what it tak IRI Software President Jeffrey Sta-

o claims IS managers will dis that PC software applications do not have the level of sophisticated drilldities that power down analysis capab users require, and that SQL datab providers are focused primarily on

transaction processing and struc-tured data rather than on end users. in addition to providing a platform dedicated to handling ad hoc queries, multidimensional databases will im-prove SQL database performance by

offloading ad hoc queries from those tabases, Stamen noted. But other suppliers of end-user qu ry tools maintain that there is no need

to support a separate database en giae for ad hoc queries. For example, SAS In ess insight, Inc. and Business Objects, Inc. have opted for an approach that uses their decision-support opication approach man uses men unit decision-support software to preprocess data in the SQL database engine itself before sending it to a client system, as opposed to requiring more to adopt another database engine to

apport ad hoc queries.
in the short term, however, PC software providers ay have an edge over the makers of end-user query reducts and SQL databases because they have incor-orated much of the functionality of a low-end query

ol into widely used Windows applications that users The products that come from the database ver

oward Dressner, an industry analyst at Gartner roun Inc. in Stamford, Conn. "They tend to be based on technical issues rather than providing

for users." For example, the Health Care District, which man-ages hospitals for Palm Beach County, Fla., deployed a client/server application based on

tools and datab Software, Inc. in Menio Park, Calif But Lloyd Chosney, who served as special coordinator for the project,

said doctors rejected the user interface provided by the query tools from informix. As a result, Chesney is now deploying Paradox for Windows from Borland Interns-tional, fnc., as a front-end query

tional, inc., as a trout-end query tool to the laformix database. And PC software vendors are promising to extend that base by adding more sophisticated analy-sis capabilities to their applica-tions using intelligent agents and

object technology Bet detabase vendors are work ing to plug this gap in their linear Sybase, for example, plans to add a Windows-based tool next year as

ment tool kit as a companion to Sybase's Unix query tool, Data ch, a spokeswoman said. Ornele, too, has graphical enhancements afoot for several tools in its

operative Development Environment line The database vendor focus for these tools has a lot of merit because IS needs to keep control of the imple mentation, as opposed to letting individual depo ots room and buy all their own query tools," Kastner

wer, Williams noted that the database ve have been late to market with graphical tools. "In some cases, database vendors will have an advantage be-cause they have a direct sales force, but they've also been displaced in a lot of accounts already by PC ven dors," he explained.

Information Builders to broaden EDA/SQL

By Melinda-Carol Ballou

Information Builders, Inc. will introd a range of products next month that it said will extend the reach of its EDA/SQL middleware into the CICS client/server

The New York software developer is expected to reveal the following: · Software that will enable users to implement transactions from any support-ed EDA client — Windows-based PCs or Unix workstations, for example against either CICS/ESA or IMS databas

es on an MVS/ESA mainframe. · A client/server engine for CICS/ESA that will let any EDA-enabled tool seec

and update data under the control of the CICS applications, according to Inform

tion Builders officials. Previously, the company only offered client read-only access to CICS for EDA/8QL.

 A DB/2 server and gateway for IBM's Distributed Relational Database Archi-fecture (DRDA) that will allow DRDA users to access both relational and nonre-lational data on the range of platforms

pported by EDA/SQL, Information Products developed jointly with Lotus pment Corp. and Dun & Bradstreet Software that will enable those penies' users to access corporate ta available on the 35 pistforms and ore than 50 databases that EDA/SQL

While earlier versions of EDA/SQL have been criticized for incidenter per-

reases those issues, according to com-ing officials and some industry ana-uts. Dubbed EDA/SQL 3.0, the newease will be green allable by mid-1994, offi-

The EDA/SQL trans erver, which will debut at atabase World in Chicago

with multiple CICS applies ons spoke about the po

end week, will allow users to ate desktop tools such as Powersoft Corp.'s Power-Builder with CiCS or IMS to create applications for the client platforms supported by EIA. The server uses a VTAM-based engine to in-voke a CICS or IMS transaction program called from the EDA/SQL client. Current EDA/SQL users

proprietary systems that have CICS in-terfaces," said Mike Orders, associate vice president of applications engi ing at the information services di ciety Management Co. in Cle land. "The EDA (trans

tion server] would open up

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New and improved, Reborn, Retread. Back tanned and fit. Up from the ashes

I'm talking, of course, about IBM. Actually, this is I m tasking of course, about IBM. Actually, this is IBM talking about IBM, and to that extent the messag is not much different from what we've heard from the

empany for several years. Years? Sure. Look under the nouncements of resurgence and you'll see the familiar "customer-driven" moniker. That was what drove the company's image campaign in 1987, its self-pro-

ed "Year of the Custom So what is new and improved, if anything?
There are several new and different factors that are an appring to give IBM a real shot at a comeback. Make

no mastake about it, this is a company that has a long way to travel before it is healthy and viable again, no

Most significantly under the direction of Jim Can navino as chief strategist, IBM

will continue to map a bottom's upstrategy cusphasizi nge, as clearly the large systems powers have cont ued to lead and mislead the company even during the long mise of the last three years

The prospects are excelle tware and software. As

server world, 06/2 is gathering steam as Windows NT e more slowly than most would have thought. Our own survey of top corporate customer showed only a quarter of the 238 companies we quegenerally liked it more than OS/2.)

The fact remains that corporate customers are gomen remains that corporate customers are go-ing to take a measured approach to NT implementa-tion. Microsoft is making hig promises, such that 40% of the customers we surveyed elaimed they il buy NT in the future. But a buyer's "plant to purchase" is di-rectly related to a wendor's "ability to deliver." And right now, IBM can deliver more with OS/2 than Microsoft can with NT

On the hardware front, IBM has an popdo what it failed so miserably at in the '70s and '80s. and that is to provide a scalable architecture. The PowerPC architecture, jointly developed with Moinro-la and Apple, promises just that, while giving a fat and happy Intel the first threat to its 75% microprocessor market share. Compared with latel's Pentium, the PowerPC is faster, much cheaper and much smaller.

But what about that oppressive, subordinating IBM culture that so effectively snuffed out the entrepreneurial spirit wherever it sprung up? in a recent interview with us, Cannavino sounded like a man charged with a culture-kill mission (see story page 137). Asked if the most sacred of IBM deities --- ac count control - is dead, he replied in the affirmative

Being great is one thing. Being great twice is anoth er, because the tendency is to employ the same strat gy in two very different circumstances. Whether IBM can avoid doing so will determine if there's a new IBM emerging or just the old one continuing to submerge





Cyberpunks and other villains

it was about 1976 when Compa terworld uncovered the evil Now, in a long overdue repeat of this public service, we are warned to watch nut for those "eyberpunks" who carry stun guns at their side ["Nords with an attitude " CW Nov 81. Thank you, oh vigilant watchers!

i need your advice on some other suspicious figures in my company I think that what I have seen them

doing is called "writing." ome of them use pens or even pencils. This is suspicious, point less behavior, because how can you compile something written on paper? Paper is far printouts, of

I overbeard one of them say that be was a "free-lancer," whatever that is it counts violent kind of medieval

He was apparently sending his writings out of the company to something called a "magazine." While I'm not sure what the point of this activity could be, he's abviously not doing this for the corporate good.

The patterns of his behavior seem nminous to me. I hope you can investigate his type and see if there are any others like him in other organizations. To help you spot him, he often wears tweed jackets and has what I take to be a manual for his misbe-

haviors, called something like Strunk and White Joshua Stern Los Angeles

EDS says: No deal. no sale

soft aperating systems, enviro ments and products to the Micro

Where was news of WorkPlace OS? 'Nuts, bolts and chips" [CW. No

15] presented a very obvious slam toward Windows NT and its supposed role in the next generation The "PowerPC 601" chart im-piles that DOS/Windows applica-

s could be executed in ema tion mode under Windows NT while the text of the article correctly states that a recompile of the ap plication software would be neces sary. Readers are being misled into believing that their DOS/Win ws applications would execu on the PowerPC when using Win

The industry analysts also fail to mention IBM's WorkPlace OS as a strategic operating system for

the PowerPC. I was under the impression that IBM had design WorkPlace OS explicitly for the PowerPC platform. Why was it not included in the

My subscription to Comp world is based on a belief that the newspaper has historically pro-vided timely and relevant informs tion in an objective manne Please, leave the byping of Micro

soft marketing department David Load Sugar Land, Texas



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I was in my kitchen be

he had heard the Xerox repairman t background, he didn't say Likewise, I didn't volunteer that I was at my kitchen table wearbe called the social acceptance of the "kitchen call-back." Conducting business from places

Work escapes the office

Ellis Booker



Client/server: It could get bloody

Michael Schrage







Ill the horsepower in the world is worthless if you can't make the most of it.
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0_____

NEC

Paul Gillin

Comdex: No gain for users



the art.

This year's Comdex was sort of like a big bowl of popcorn: large and appetizing, but when you come right

mostly siz.

Wendows reached new heights of follows, using stants to attract attention (anyone who can shrew six anyone who can shrew six anyone who can shrew six anyone six an

Case in point: The big stories at Comdex were about technologies that let users install add-in boards quickly and painlessly, link graphics seamlessly into computer hardware and integrate networks with the operating system. In short plans finally succeeded in reductive has finally succeeded in reductive has finally succeeded in re-

making the Macintosh. I guess this is important in some parallel universe, but to users struggling to get two E-mail systems to talk to each other in the real world, it

seems pretty trivial.

The PC industry has always had an incredible capacity for solf-congratulation, and Comdex is its annual self-conferred reward for a job well-done. But the unrelenting spew of "smaller, faster, chesper" is wearing thin as the problems facing corporate IS become more

complex and resistant to a quick fix with a hot box. The last interesting Condex was in 1681, when Windows' preence was beginning to be felt and software vendors experimented with some really new ways of doing things. In the two years since.

software vendors experimented with some really new ways of doing things. In the two years aince the software business has lapses back into its more confortable habit of cramming each shrinkwrapped box with more features that fewer people will no.

Gizmos galore Hardware makers are happy to take cover briefly from their self-

destructive price wars and first their new Whitzeer seachine with the Ronce Wooder Chip that will draw Made thord ideal and the cheer gay's. I'm sore this is interesting to someone but probably not to the 70% of buyers who still use their mechines principally for word processing, spreadsbeets and E-mail. The basic discounned of Comden.

struck me while I was standing in a long phone line just off the show floor. A fellow in front of me, evi-

Drag and drop for DOS

Workplace Shell for DOS nears beta testing stage

By Ed Seannell

IBM's Personal Software Products group finally showed off an early version of its Workplace Shell for DOS at this mouth's Comdex/Fall '98, saying the product would enter bota testing in

Jest like its hig brother — the version that sits on top of OS/2.2.1 — Workplace Shell for DOS gives DOS users the shells to drag and drop files to other directories or be printed. Users can also resize and servel through windows. Users will not get precaptive multitacking, but they will be able to rapidly switch tasks among several DOS and Windows applications.

Although mode by a diction, windered stripment of DDS and DOS spiciation lidely still special large marks of DDS and DDS spiciation lidely still special large marks of DDS and DDS spiciation lidely still special large marks of DDS and DDS

Unlike the hefty memory and disk storage requirements for the OS/2 version of the Workplace Shell, DOS users need only an S0286based system with 1M byte of memory to operate the program.

operate the program.

The DOS version of the shell gives Persons
Software Products a unified look and feel to it
operating systems line, which may reduce

training costs at some large corporate accounts using both DOS and OS/22.X. But whether it allows BM's DOS 6.1 to signiffountly cut into Microsoft's almost monopolistic control of the DOS and Windows market is

Marketing machine Microsoft has already sold well over 5 million retail copies of DOS 6,0 and maybe twice that many through its hundreds of OEM contracts, according to estimates by Microsoft IBM has sold shows 500 000 contract (NCDOS 6.1.

edd about 500,000 copies of PC DOS 6.1.
If IBM had been able to ship PC DOS 6.1 is tandem with Workplace for DOS last spring when Microsoft's MS-DOS 6.0 was getting hammered for bugs, IBM could have built some mo-

mentum, some corporate users said.

"Last spring IBM could have sold the story that if hed a more sold product and offered some significant value add force MS-DOS 6.0 with a superior interfuse," said Mike Drips, a consultant and corporate beta tester of IDOS and Windows in Tamps, Pin. "But now it midth

be tough to sell that story." Window of opportunity

Microsoft is not expected to deliver the 32-bit version of Windows 4.0, which is said to have somewhat of an object-oriented took and feet, until iste 1994. The more optimistic believe this means IBM has a chance to make more than

until late 1994. The more optimistic betieve this means IBM has a chance to make more than pockot money.

"It users feel consfortable about its IPC DOS 6.1°s) stability, and this shell lets them more easily get at DOS functions — easiler than Windows — they should win over some corporate lans, "and one nearwho has boured through an

Workplace Shell, page

Upcoming PowerBooks ready for PowerPC board swaps By James Daily London Daily Dorable like. The power-efficient

Users of Apple Computer, Inc. Power-Books who want to take advantage of the speedy PowerPC chip are beginning to see an upgrade path hacked out by both Apple and third-party developers. Analysts familiar with Apple's plans

said the company will introduce a family of PowerBooks based om Motoroia, Inc. a 68040 microprocessor by the middle of next year. That is the chip Apple has targeted as the springboard to the RISCbased PowerPC.

Unlike other PowerBooks, the new models will have processors mounted on easily removed daughtercards, making it easy to repince them with the PowerPC 603 processor designed for the Macin-

toch portable line. The power-efficient PowerPC 605 is comparable in performance to the 601, which is expected to begin shipping in entry-level models in March.

Analysis said exact pricing has not been established for the upgrade boards, but it is likely they would cost from \$1,000 to \$1,500 and operate in the 05-to 85-MHz range. Apple is also expected to offer 605 upgrades for the Duo line as well.

Honorable Intentions Another upgrade offering is being developed by Reply Corp. in San Jose, Calif. At

oped by Reply Corp. in San Jose, Calif. At Condex/Pall '85, Reply announced its "intention to develop" PowerPC 663based logic board upgrades for 680x0based Maintenber. In March, Apple is expected to ship several entry-level desktop Macintoshos based on the PowerPC 601 chip, which is a collaborative effort among Apple, IBM and Motoroin.

Apple spokenwonen Betty Tuylor sald the company intends to provide PowerPC upgrades for 68040-based Macistonhas, including the Macistonho Centris 810, 850 and 8804V, Macintonh IIVX sald IVV, Performs 800; and Quadra 800 and 840AV systems. Developers such as DuyStar. Digital, Inc. have promised to make upgrade cards available for the Quadra 700,

The apprade plans are welcome news for Macintonh fann such as Brian Comnes, manager of the information center at DHL Airways, inc. in Redwood City, Calif. "We have to make plans for the fature, so it's good to hear that we're getting some direction," Cennese

The PowerBook has been a hot seller ince Apple introduced it at Comdex/Fall '91. The company recently claimed to have sold its milliouth PowerBook. In addition, research firm international Data Corp. (IDC) says PowerBook sales will be up 32% this year, from 440,000 in 1962 to 580,000 in 1963.

Receatly, however, some users have begen to criticize Apple for not staying technologically abreast of the competition [CW, Nov. 15]. "The PowerBook just doesn't leap out from the pack the way it

used to," said Eric Lewis, an analyst at IDC.

The PowerPC upgrade path is an important move for Apple but not the only surprise the company has planned for the line.

Sources at Apple said engineers are busy trying to add a PCMCIA card to a 6804-based PowerBook by next year. PCMCIA cards are tiny devices that contain hard drives, modems or additional

UPS delivers new bar-code system to public domain

Drivers for United Parcel Service, Inc. will be carrying a new handbeld computer in their delivery trucks this holiday season. UPS recently announced a complete apgrade to its delivery system and some new technologies here at Comdex/Pall '83, in-

cluding the following: *The Delivery Information Acquisition Device (DIAD) II. UPS designed the 7- by 12-in. ethilar-equipped DIAD II, which uses the impany's proprietary software. To be rola, Inc., it replaces the 3-

year-old DIADI. laxicode, an alternative bar code ti stores significantly more information in the same space as a conventional bar code.

*The Customer interface Device (CID), a tool to let UPS drivers upload and down-

load package information at the nick-up Lyan Newport, vice president of re-



Lynn Hewport, vice president of R&D, said UPS is looking for a competitive advantage from its new in use-designed technology in the tiaht package-delivery market

pany hills as a competitive advantage. For instance, cusrs who choose the Maxi code or CID systems may find themselves locked into a particular way of sending packages. It's a battlefield

velopment costs to build just

the Maxicode symbol and relat-

ed technology, which the com-

in the battle for accor major package delivery services, "it's definitely part of the strategy to bond with the customer" through the use of technology

Newport said. Walle UPS will put its Maxicode bar-cod alternative in the public domain, it will stipulate that certain related technologie such as a camera that reads Maxicode, sol he sold to competitors such as Pederal Express Corp.

scarch and development at UPS, said it took five years and some \$5 million in de-Newport estimated it would take a de-cade to outfit all of UPS' 1.400 facilities with contrast, will be out much faster. UPS has purchased 21 000 DIAD II units to roll out before Christmas and expects to give all of its 55,000

drivers the new system by the end of 1995 The DIAD II weighs almost a pound less than the eliphoard-sized DIAD I. It is also backlit, smaller and better balanced than

its predecessor, according to UPS.

Jim McFladden, a UPS driver, said he sa his colleagues tend to type with their thumbs while walking, and new dual-function keys and a smaller keyboard make it

ible to reach all of the keys. CID has a parallel connector so it can at-tach to both printers and PCs. The PC ould recognize it as a virtual disk drive. The CID system goes into alpha testing

Comdex

CONTINUED FROM PAGE 37

ntly a PC support specialist in some use company, was shouting into the phone and ges-turing angrily. From what I could hear, it seemed some crucial network component back at the office had gone on the fritz, and the poor my was the only person in the company who ow what was wrong. He was demanding that never was on the other end of the line get the ndor out to the site and fix the @%:3% thing. I felt bad for the guy. A few feet away from im stood the doors to a comp

World, a place where E-mail always reaches its on, packets always switch and ever booth the accountant in Turson Ariz, was

sharing the document with the manager in Philadelphia while both cracked jokes and marveled at how easy it all was. Shows started every half hour.

Meanwhile, the real world went on outside Corporate users attempting to connect their etwork operating systems were foiled by the fact that the CEOs at the two most important companies in the PC industry hate each other The dominant user interface on the desktop continued to be based on a model designed in the early 1970s and commercialized nearly to years ago. Open systems were open only so long

as you used one vendor's open system. The juggler with the knives would have had a hard time making a joke out of that one. Pass

Gillin is Computer world's editor. His MCI Mail address

Workplace Shell CONTINUED FROM PAGE 37

The product offers users two d

ferent ways to look at information - folder views and directory views. Folder views let users orga nize objects in the way that best

suits how they work. Directory data on their hard drives One drawback to the shell nov is that there is no software devel ers rewrite existing or new appl cations that fully exploit some of the new shell's servier features.

Products President Lee Reiswig maid the company is considering offering a development kit, but be declined to say when that decision obtam ad ble

Helping hand Some of the technology used in the oduct was licensed from Paper oftware, loc. a small start-up in opstate New York. Earlier this year, the company shipped Ver-sion 2.01 of its Sidebar product, which was designed as a Winds

ed look and feel, it takes up a scant 250K bytes of memory, compared with the several megabytes reguired by OS/2 Workplace Shall

OLE support penned into Windows report writer for PC, SQL databases Ry Michael Vistard

rtSmith, Inc. launched last week at Comden/Fall '83 the first Windows report writer for SQL and PC databases that will support Object Linking and Embedding (OLE) 2.0.

As one of the first traditional info tion systems tools to support OLE 2.0, the latest version of ReportSmith seeks to bridge the gap between traditional PC se and report writers for dataes, the San Mateo, Calif., company

To accomplish this, ReportSmith 2.0 will allow users to click on an icon to cre-ate a report using SQL. To create com-pound documents, that data can then be egrated with word process radsheet armit integrated with word processing and spreadsheet applications in Microsoft Corp.'s Office suite that support OLE 2.0. For example, the Department of Envi-

Maine is using ReportSmith as an end-user query tool for accessing Micro-Novell, Inc. NetWare server and SQL cases from Oracle Corp. running on a Digital Equipment Corp. Ultrix

io need to know SQL Basically, it allows our users to generate reports on specific topics from their

Windows system without ever having to touch a keyboard. ReportSmith provides a common report writer to 95% of our databases and takes away having to w SQL from the users," said Wayne Gallant, systems team leader at the state With the arrival of Version 2.0, Gallant

said, he will start investigating how to etter integrate those reports with PC

applications via live the Basic derivative from ReportSmith to drive OLE 2.0 and Dv-Data Exchange (DDE) proto-

We'll be looking at OLE and DDE down the road. Right now, we don't have anough experience to work with them yet," Gal-

He said in the short term his agoncy will take advantage of two other features that are included in the new release. One of those features is improved support for creating labels; the other is the ability to

The Last Stee Season Sugaren Spaces Spaces Steen Steener States

new version of ReportSmith now supports OLE 2.0, which ould enable FC weers to generate reports from within

nent for Gallant. Priced at \$299, ReportSmith 2.0 also

cludes support for cross-tab reporting default report formats and a draft mode that allows users to preview a ort. It is scheduled to be available multiple places in a database, a key ele· ADRA SYSTEMS · COMBS INTERNATIONAL, INC. · OCA, INC. · NETMANAGE · ALTAMIRA · CONGRUENT · BLACK FOREST SOFTWARE VAD SDETWARE - MATHSOFT - DRACLE - WONDERWARE - THE MATHWIZARDS - PREMIA CORPORATION - MOZART SYSTEMS CORP. CORP REALTIME PERFORMANCE, INC. - EX MACHINA, INC. - NUS - ONE-TREE SOFTWARE - TRIMCO - WATCOM - INCLINATION SOFTWA A WOOLLAM CO. MKS INC: ARITY CORPORATION - INTERSOLV - PEACOCK SYSTEMS, INC. - WOLFRAM RESEARCH CORP · COMPASS POINT SOFTWARE · EAGLESOFT CORP · KEA SYSTEMS LTD. · MERCURY INTER I FINEL SYSTEMS INTERNATIONAL - SOFTOOL CORPORATION - SOHARE-D COMPAR SOFTWARE, INC. - AUTOLOGIC, INC. - DIGITAL MATRIX SYSTEMS - TRW - ONB SOF DUERCUS SYSTEMS · AXTEL, INC. · RAINORDP SOFTWARE CORPOR MCGILL UNIVERSITY SYSTEMS INC. - NUKO INFORMATION EXCELLENCE BY DESIGN INC. - VISISOFT - ALTAIR ENGINEERING, INC. TOVIEW DEVELOPMENT CORP. MICROEOGE INC. - SAS INSTITUTE INC. - B VITAL · SL CORPORATION · JETFORM CORPORATION · EXECUTIVE SOFTWARE INMARK DEVELOPMENT CORP. KNOWLEDGE GARDEN INC. - NEURON DATA - PARA · ARSOFT CORPORATION · GRAY TECH SOFTWARE · PERSISTENT DATA SYS IMBRES - INTERGRAPH - RASE TECHNOLOGY - VOX-LING, A LATEINER DATASPACE COMPANY - DIGITAL EDUIPMENT CORPORATION FIAN COMPUTER GROUP ANT CORPORATION - HIPPO SOFTWARE INC. - WELCOM SOFTWARE TECHNOLOGY - CPI SA - SPATIAL TECHNOLOGY OBER PROBLETS INC - BLOSSOM SOFTWARE CORP. ANSDET CORP. P. & J'S SDETWARE - VISUAL NUMERICS

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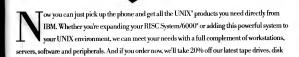
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Carole Patton

OS/2moves out -alone



lion, IBM can legitimately hoist a blue victory flag over the high-end PC desktop market But how to apportion this success? Is it due to OS/2 alone or to OS/2's ability to run Windows? IBM will soon release a version of OS/22 L code-named Ferengi, without

the Windows code - and we'll all find in the IRM vs. Microsoft desk Perengi (which will be tagged "OS/2 Special Edition" or something similar when it hits the street) represents a critical turning point in May 1992, when OS/22.0 shipped, corporate America still did most of its computing on machines with

2M hytes or iess of RAM, an amount insufficient to cope with OS/2's hefty 8Mbyte minimum requirement. At the same time, third-party devel-ers, cashing in on the Windows boom, gave little thought to OS/2. Short term, with few native applications. IBM hanked on OS/2's ability to run Windows and DOS programs to keep its advanced, \$2-bit op-

crating system alive and viable. But now IBM must expand its OS/2 user base. And Ferengi, due out this month, may well do the trick. The strategy is hased on simple economies: Perengi will contain no Windows code, but it will in teract with Windows 3.1 just as if it were OS/2'sembedded Win/OScode, Users will continue to run DOS and Windows applications, but Ferengi will still for around \$39, well below the current retail

price for OS/2. More importantly, sales of preloaded OS/2 could rise dramatically once PC manufacturers realize they won't be paying Windows royalties twice (once for Windows and once for OS/2's Win/OS)

And there's yet another surprise up IBM's sieeve, it's a neat little peer-to-peer version of OS/2 that's still in bota testing. This product requires just 8M hytes of hard disk real estate.

Both Ferengi and peer-to-peer OS/2 ould quickly move IBM's operati system onto more desktops. But what Big line needs most to win the operating sys tem war is native 32-bit OS/2 applica tions, Most Windows developers are planning to move their t6-bit applica-tions to Microsoft's Win32s, and these programs just won't run under 32-bit OS/2. Win32s represents a compatibility fork in the Windows-OS/2 evolutionary path. Choosing OS/2 instead of Windows could soon mean taking "the road less

Or will it? IBM is making a stand. OS/2 has been given an evolutionary plan of its own, leading directly to the new world of objects. All that's needed now is a couple of great software packages to help increase 08/2's retail appeal. Pergood word processors like Ami Pro for OS/2 or WordPerfect 6.0 for OS/2, which are both due to ship soon. Or perhaps the upgrade to 1-2-3 for OS/2 and sance for OS/2 (both due from Lotus in the first quarter of 1994) will do the

ilee utilities OS/2 already has some nice utilities. many from small developers. There's Deskman/2, an invaluable belper from Development Technologies, Inc. in Forest Acres, S.C. It's invaluable because each object on the OS/2 desktop has settings

(like copy and delete) that are not avail-able elsewhere. Then there's Golden CommPass, a communications program for automat-ing access to CompuServe. In its first iteration, this program locked up my system on more than one occasion. But its

developer Creative Systems Programming in Mount Lauret, N.J., made the needed fixes, and the latest version (2.1) looks good More OS/2 goodies are emerging every day. The latest, CursorPower for OS/2

from North Shore Systems, Inc. in Incline Village, Nev., lets you resize (and redesign) your cursor Now, anyone care to guess what "Fe-

rengi" really means?

Putton is president of the Mendham Technology Group in Mendham N.J., which produces Client/Server summits for corporate strate gists. Her MCI Mail address is 401-4569.

Ministor PCMCIA products

CAD manufacturing

AutoDesk enters new market

By Ellis Booker

oite leading the PC-based computeraided design (CAD) market with Auto-CAD, AutoDesk, Inc. in Sausalito. Calif...

has so far struggled to crack the manufacturing market. That could change with a AutoCAD empanion product introduced with much fanfare earlier this mouth at the

act trade show in Chica Called AutoCAD Designer, the three-dional solid modeler is aimed specifically at manufacturing engineers responsible for designing parts. A so-called

"associative" design tool, Designer per-mits users to modify drawings and have these changes dynamically updated on a detailed manufacturing diagram or vice

The "CAM" side

Analysts said Designer finally addresses the "CAM" side of AutoDesk's compute aided design/computer-aided manufacturing (CAD/CAM) product line.

However, migrating users from two-diensional to 3-D design tools is still a "big step," said Joel Orr, chairman at Orr Associates, Inc. in Virginia Beach. Auto-Deak officials agree but said because the tool works within AutoCAD Release 12-AutoCAD now leads the PC-based

CAD/CAM market with nearly 1 million

"In the past, design tools of this quali customers or too complex," said Ken Spensor, general manager at AutoDeak Mechanical Division. "Now, 3-D design and manufacturing is no longer for the

The first release of Designer does not bandle part "assemblies" used in comufactured machines such as cars and lawnmowers. Future versions will be able to handle these items, Auto-Desk officials said. The current prod is "capable of modeling 80% of the ob-jects you'd find in a garage," they added. Designer will be available in the first quarter of next year for \$1,500. It requires an 386/488-based PC running DOS 3.3 or higher with a minimum of 8M bytes of RAM and 5M bytes of hard disk

As part of the Designer announcement, AutoDesk released the next version of AutoSurf, its surface-modeling

tool for AutoCAD.

Like Designer, AutoSurf runs within
AutoCAD Release 12 and will be available in the first quarter of 1994 for \$1,500.

drive, the company said The product is available in XT/AT bus onfigurations with Pentium processors running at 60 and 66 MHz.

PAC-586 pricing begins at \$6,000. Dolch Computer Systems (409) 957-6570

Leading Edge Products, Inc. has addedadvanced features to its WinTower 486 and WinPro 486E line of PCs.

and WinPro 4882 line of PCs.
According to the Westboro, Mass.,
company the models are based on Intel
Corp. 1 4865X/25, 4865X/35, 486DX/35,
486DX/36- and 486DX/36-MHz chips.
The systems effer 4th bytes of memory,
expandable to 64M bytes on the motherboard, and a socket for quick micropro-

essor upgrades. Other features include 1M byte of video RAM (npgradable to 2M bytes), 64K bytes of external cache (upgradable to 256K bytes), FlashBiOS technology, five drive bays, four 16-bit XT/AT hus expansion

beys, four 10-on A17A1 into explanation stots, dual floppy drives, one parallel port, two serial ports and a mouse port. The units also come equipped with a 200W power supply, keyboard and a mouse. Preinstalled software includes

Microsoft Corp.'s Windows 3.1, DOS 6.2, Works for Windows, Money, Productivity Pack, Entertainment Pack 4 and the com-pany's Utilities Control Center. Prices range from \$1,350 for the Wis-Tower 4968X/33 MHz with a 170M-byte hard drive to \$2,199 for the 496DX2/

MHz with a \$45M-byte hard drive. Leading Edge Products (508) 826-4800

Comdex products

Canon Computer Systems, Inc. intro-duced the BJ-10Sx, an enhanced perforce, lighter-weight model of its Bubble Jet printer. According to the Costa Mesa, Calif.

company, the printer features a 1.9-in. profile, weighs 3.7 pounds and delivers 380 dot/in. laser-like output. It is 30% faster than its pro-The BJ-10Sx can operate with either AC power or an optional battery pack

that lets users print up to 40 pages from a single charge. The product employs a high-resolution 64-nozzie print head that produces 360

dot/in. resolution on letter and legal-size pinin paper, envelopes or transparen-

The BJ-10Sx costs \$349. Canon Computer Systems (714) 438-3900

Dolch Computer Systems introduced

the PAC-586, a Pentium-based portable According to the Milpitas, Calif., com pany; the PAC-586 delivers 47 MIPS and comes standard with five full-length slots

and 275W of system power. The platforms can accommodate a embination of three drives to include a floppy drive, a hard drive up to 1G byte in size and a 5%-in, drive such as a CD-ROM

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1-2-3 RELEASE 4 BRINGS IT ALL TOGETHER.



Once again, the world of spreadsheet users is coming together around

Lotus* 1-2-3.* The new 1-2-3

Release 4 for Windows™ has made using a spreadsheet easier, faster and dramatically more productive for everyone based on hundreds of advancements in functionality and usability.

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But it's the Working Together' features of 1-2-3 that are redefining the spreadsheet. These unparalleled workgroup capabilities are not only improving the way people work with spreadsheets, they're improving the way people work with each other.

Users who often collaborate on developing and refining worksheet data...will find Release 4 indispensable. PC/WEFK 5/3/93

> CONNECT ON A BASIC LEVEL

The first level of Working Together is net-

TION DISCOVERS EADSHEET.

working Every 1-2-3 package can be installed on the network right out of the box No special version is required. And because 1-2-3 and all other Lotus Windows applications are mailenabled, you can quickly and easily share your data with others on the network. And vice versa.

COLLABORATE ON A HIGHER PLANE.

The real power of Working Together comes from 1-2-3's advanced Versioning technology

and group editing powers. These are features no competitor can match. With Version Manager™ tech-

nology workgroup members know who made what contributions to a file, when and why Each group member can save label track mix merge and comment on ranges, worksheets or entire files And do it all without overwriting existing data or making multiple cogies of the same file. Now were sharing ideas not meetly sending spreadsheets.

All this can be done over LANS, e-mail or even diskettes for that matter.

RAISE YOUR GROUP

Working Together with 1-2-3 can be further enhanced with Lotus Notes* the market-leading



Version Manager lets each member of your workgroup know who made what changes to a file when and who.



With Notes 12, you may your any one can some distribute and manage 1-2-3 date on Letus Notes. And with a sweple of if your mouse, you will instantly be launched one 1-2-3 and it analything spreadshert to get the specifics.

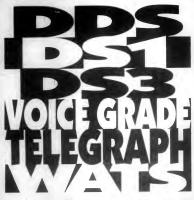
groupware. Notes allows different users to access track and share work on the same spreadsheet at the same time, with the full security of a Notes database. And it's all updated in real time. As a result teams can collaborate to perform everyday business processes in ways never before possible. Ways that are faster and much more productive.

And with Notes/FX^{tot} you can not only access and share 1-2-3 data in a Notes data-base you can double click in the Notes form and instantly be launched into the underlying spreadsheet in 1-2-3. Now you've got the spreadsheet power to edit the data.

Notes also features replication so traveling team members are immediately up-to-date as soon as they reconnect to the network.

To join the hundreds of thousands who are switching to Lotus 1-2-3 Release 4. call L-800-TRADE UP. ext. 9334.* or visit your Lotus Authorized Reseller. It's not only easy to work with it actually makes you easy to work with.





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LAN group votes on wireless standard

By Stephen P. Klett Jr. Users frustrated by the drawn-out wireless standards process recently and a hoost followings meeting of the Inslitute of Electrical

When do you expect to implement wireless LANS!

media-access control (MAC) protocol on a proposal called DFW MAC that was submitted by Xircom. Inc., NCR Corp. and Symbol Technologies Inc

The goal of the pro-torol — which defines how wireless devices interact with a network-isloallowmobild users to roam freely throughout a building or campus while maintaining a

> connection to network resources. This is definitely a estone that will keep wireless going forward," said Lt. Fred Taylor, an eostneer in the interop

ability test center at the U.S. Air Force Command and Control Communications and Computer Agen-ev in Scott Air Porce Base, Ill. The center is testing various forms of Wireless, page 50

By Craig Stedman

- Digital Equipment Corp.'s PC business unit

plans to introduce next spring a line of multi-processor LAN servers in an attempt to become more competi-tive with the likes of Compaq Computer Corp. and IBM in that part of the market, where Digital

The servers initially will be sold with up to four Intel Corp. Pentium rocessors, said Lex Dekkers, a PC product line manager at Digital. But he added that the servers will also eventually support Digital's own Alpha AXP chips, a

modular approach libe company is also using on recently introduced DECpe XL single-user machines ICW, Nov. 81. Other features planned for the servers include uninterruptible

power supplies and support for redundant arrays of Inexpensive disks, Dekkers said. Analysts not ed that they also expect Digital to use advanced SCSI-2 storage and Error Correcting Code memory in order to match Com- coming servers could make it easier to de

Digital's existing LAN server, the DECpc 400ST, is limited to a single processor and will be 2 years old by springtime. "They definitely

DEC plans PC servers

need some apdating at the server end," said Randal Glusto, a PC analyst at WorkGroup Technologies, Inc., a

consulting firm in Hampton, N.H. istrator at Bridgeport Hydr in Bridgeport, Coan., said the m

tiprocessor server plans sound is trigging, but be added that Digita little bugs" in its desktop PCs. improve and I'm not talking dras

tically, then I would trust them in potting in a real file server," be said. Yakerson, who uses AST Research, Inc. servers, said Bridge port Hydraulie has had prob with floppy drive failures on Digi

istrator at the Santa Clara Valley Medical Center in Santa Cia Calif., said the minicom

spected to be provided with the up Multiprocessors, page #

E-mail scheduling faces challenge

and Electronics Engineers, Inc.

In a move that brought interop

erable wireless LAN products clos-

er to reality, the 802.11 wireless

LAN committee voted to been the

(IEEE) in West Palm Beach, Fig.

While the main players in the PC-based electr market - Lotus Development Corp., Microsoft Corp. and WordPerfect Corp. - are jockeying to pron their mail-enabled scheduling programs, some users finding that

E-mail is not the best That is because scheduling packages that rety on E-mail are subject to its untimely store-and-forward nature. Undates to corporate calendars

scheduling based on

only happen as often as the E-mail post office exchanges messame in companies that are downsizing based office packages, which operate in real time, the delay can be annoying.

Terry Sovil, a project manager at GE Capital Fleet Services in Eden Prairie. Minn., said one of the many benefits to any mainframe-based system is that data is always truly up-to-date because it exists only once. On the LAN, information resides on different servers, and

schedules and rooms that are in demand.

To avoid such delays, Pfizer, inc.'s U.S pharm cal group in New York decided to use a cal ing package that allows meeting organizers to

> uding Lotus' Organizer, ad nicked On Time Enterprise for NetWare from canabilities

mented as Novell. NetWare Londable Directory Services in Net Ware 4.0. eliminating the

pend on E-mail for its transport, it can send meeting no cations to users via the popular E-mail pack Although the E-mail-based packages Gree

ed varying degrees of group searching, they did not have immediate access to calendar info ability to book meetings on the spot and security fea-teres that let users share calendar information without

ving away details about their appointment, he said. Despite the store-and-forward delay factor, GE Ca al Fleet is leaning toward Lotus' Organizer as its gro scheduling package to run on top of CC Mail and N One method to shorten the E-mail-related delay is a ply to propagate E-mail exchanges more often, S-said. However, that increases the messaging network traffic, he added.

Checking up on the postman

Cheryl Gerber

Very little flow in work flow

If work-flow technology is being used to drudgery of serial processes in manufac-turing — which it often is, to great effect - flexibility isn't an issue. But when rk flow moves out of those static and table chores and enters the fluid

ngeable realm of human processes. s rigidity does become a problem.

The question is whether developers etively build software to anto-

mate ad boe human process Looking at current work-flow prod ucts, it seems to me that this software is suited only for simple and predictable situations and probably won't ever acsire enough features to accommodate homan nature

Brownell Charistrom, a leading workflow consultant, is much more upbeat. While conceding that effective implementation of the technology has a long way to go, be maintains that "work flow is suitable for any place where buman processes happen." What critics have to understand, Charistrom says, is that "to day's work-flow products are baby steps

Every product on the market is in Release One Among the deficiencies of the carreot erop is the complete lack of support for mobile computing. As far as I know, there is not one off-the-shelf or customized work-flow product that gives users the freedom to create a simple work-flow ess on the fly and send it from a lap-

top. There is also no support for wirele computing Given the growth of those two forms of computing and the fact that every day more business processes require

participation from afar, this may be the most glaring problem of all. But then there is also the highly proprietary, areane nature of the work-flow development process. The fact is that every work-flow - and workgroup - vendor has its own proprietary scripting language, and the programming is done in two basic ways: with logic expression or drawing products. Only a few trained de-

velopers know how to program work-

flow applications in these private lan guages. The isck of a standard, open method for programming these applies tions is a serious shortcoming. I'm not inclined to want to see another stand group form, but there might be a real use for one in this instr

Ed elso like to see more specific information in work-flow applicatious. something Charlstrom

specification." For coam ple, I don't just want to know how purchasing is handled in Company A. I. chasing in Company A is different from purchas-

ing in Company B. And how about more 'If ... then" options? For instance, what happens

if the work-flow process is set up for Administrator A to send a document to Administrator X, but X isn't available? Work-flow applications today assume that everyone is static and routines never vary; that unpredictable bu-

man things don't hape Susanna Opper, a groupu tant likens the use of work flow procees to The Nine Dot Puzzle, where the so-

iution comes from connecting all the dots without raising the pen or going outside the nine dot area. There are lots of artificial constraints.

If work flow is going to automate real human activities, the technology must be in the hands of the users and must give

If work flow is

going to

automate

human

activities, the

technology

must be in the

hands of the

users.

them the ability to perform real functions as necessary no matter where they are. They shouldn't have to know a difficult, private lanuage and Boolean sig ra to automate a new

idea in an ad hoc pro-If work-flow vendors don't make the technology less areane and more accessible, they can expect to be pur aside by the likes of Mi-

crosoft and Apple, which an ad hor work-flow type functionality in Cairo and the Open Collaboration En ronment. And they better move quicklessure they probably have less than a vest to prepare for that competition

Gerber is a free-lance technology writer be in San Francisco. She can be reached on CompoServe at 73142.64

Digital adds NetWare

is Digital Equipment Corp.'s storage business unit recently expanded its StorageWorks line for non-Digital plat-forms, introducing a series of products that support Novell, Inc. NetWare y3.11 nts and servers. It also added m tels for use with Sun Mi-

set of Sun products last sumbeyond its own customer

The company now is mar-eting deaktop and deaksubsystems, optical jukeboors and a redundant arrays of inexpensive disks (RAID) unit for both the Net-Ware and Sun environ-

duced earlier this month are shipping now. Digital said. The company is trying to en-tice NetWare and Sun resellers to sign on to market its devices, although it has not yet disclosed any agree-

ents along those lines. Digital has high hopes for the off-base storage business, and J. Michael Casey vice president of storage rerch at Computer Intelligence/InfoCorp in Sunta Class Calif, said the brendth and modelarity of the company's product line are points in its favor

Pricing for StorageWorks is also "rein-

tively aggressive," Casey added, but he noted that competition is beavy in both the NetWare and Sun storage markets. Digital's sales in those markets are unlikeby to approach the size of the business the company gets from within its customer

base, Casey said. Fara Yale, an analyst at Dataquest, Inc. in San Jose, Calif., also had words of praise for Digital's technology and pricing However the attempt to

hulid up indirect ebannels requires a major invest ment, and Digital still needs to prove that its commitment is truly long term," she

Digital officials said the peny is looking to expand the StorageWorks line to other platforms early next year

Sources indicated that Apple Computer, ine.'s Macintoch line and Hewlett-Packard Co.'s HP 9000 Unix systems are likely to be amount bose targeted by the

Briefs

IBM works with ICI

ICL and IBM announced an agreement under which ICL's Sc celerator, a specialized package rdware and software designed to off-load parallel searches of relational database tables, will be

Platinum expansion Bewiett-Packard Co. and Platin Software Corp. amounced a marketing agreement under whi

ade available on HP 9000 orientations and servers. In a similar proment, Platinum and Sun Micro-ratems, Inc. said the Platinum ackage is now available on Sun

SK, Sun expand deal The ASK Group, Inc. has expan its partnership with Sun by add

Maestro ported to NCR, Sun

Multiprocessors CONTINUED FROM PAGE 47

size off VAX/VMS machines and switch more operations to Novell, inc. NetWare

I AN-The hospital has two of the 4008T servers, and Williams said he would likely stay with Digital as a supplier as long as the new machines have competitive pric-

"They're always a little bit late compared to AST or Compaq, but they get there," he said, speaking for himself and not on behalf of the medical center. Chuck Venter, a Meta Group, Inc. apalyst in Westport, Coun., said Digital's ser-vice capabilities could help set it accept ed as a viable LAN server vendor. "IBM exploits that when it does things right and I think that's something Digital can also use to its advantage to move forward," besaid.

A long way to go Vector added, bowever, that Digital still

aces a tough baul to get its name on the list of companies that users routinely consider for server buys. He said users outside of Digital's installed base mainly think of Compaq and IBM when it comes to servers.

Giusto noted that Digital will have to try to find a way to keep its servers to ing viewed as a me-too answer to Com-

nee's Profiant family "It's going to be difficult to differenti-ate beyond the Alpha capability, and in ere' minds, Alpha is still a big ques

NEW WINDOWS FOR WORKGROUPS 3.11 ALLOWS YOU TO NETWORK SMOOTHLY AND EFFICIENTLY.

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Wireless

CONTINUED FROM PAGE 47

ess technology for a

nch as video teleconferencing. Taylor said a standard MAC protoco was particularly good news for sites such as Scott Air Porce Base, which buy mostly off-the-shelf products instead of

ake things easier for us," he said. Xircom, NCR and Symbol had been pushing their own separate but similar cols for standards consideration ut agreed to combine their technologies in hopes of speeding up the standards process. This cooperation was a primary

on why DFW MAC best out co osals, including one from IBM. DFW MAC is based an Xircom's Netwave MAC technology which Xircom nitted to the IEEE for standards approval in September, DFW stands for Dal-Inc Port Worth which is where the three ompanies drafted the proposal. While a formed standard is still re

two years away, 802. t1's adoption of the eal enables vendors to begin devel oping interoperable wireless LAN products. Users should start seeing produ conforming to the standard that run on various physical layers, such as direct sequence, spread-spectrum radio and in frared, by the middle of next year.

Other neers said they were more int-

"A MAC standard is nice, but right now the biggest standard for us is in the communications area — setting a standard for wireless transmission speeds to help cut out interference," said Joe Potoeny MIS director for the city of Mission Viego, Calif. However, Potocny said the MAC standard could be more significant for the city in a year or two, when it plans to

A wireless pioneer, Mis stalled Metorols, Inc.'s Altair Plus wire-less LAN in 1991 to support the municipality's 90-plus users. By going wireless. Potocov said he

Cost still high

ns LAN at \$1,17

blamed mostly nn wiring connections and cabling standard MAC protocol

was able to eliminate 80%

of the city's network cabling and 90% of its network prob lems, which he

was necessary but downplayed its im-pact. "Essentially, it's a window dressing, but it ensures users of some level of compatibility," said Dave Mack, an ana byst at WarkGroup Technologies, Inc. in Hampton, N.H. "It's not going to turn on the manufacturing faucet overnight."

Analysts cautioned that standards are never a pnetime issue and that users should not be surprised to see a new set nf standards developed a year from now

or significant modifications made Proponents of the standard acknowledged that there was still a long road ahead. "We're not asserting that this is 'the standard' because it's not written in stone yet... Other companies can still contribute and tweak it," said Phil Belangur director of marketing for wireless products at Xircom in Calabasas, Calif., and a co-author of the protocol. "How er, it does lay a foundation that will allow us to move ahead faster.







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WHAT OTHERS PROMISE TOMORROW,



Parallel box draws near

Hit is constitutly on schedule with Enterprise dystensibility parallel proour anzonement set for laiser this ya company encertive said tast week. the unrealing will likely share just on tables— or were laiser. The machine, intended to handle or para database queries and citional is

THE PARALLEL UNIVERSE GROWS

Unity, Intel, and IBM are moving into "alternative mainfrantes" from hand are better than one, who are the force to the first hand to the first hand to the first hand to the first hand to the first struggled to build be faster to the first hand to the first struggled to build be faster to the first hand to the first struggled to build be faster to the first hand to the

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To find out how to get real reliability, call 1-800-959-2492, Ext. 712, for a

Lawnmower maker cuts an EDI path

The Toro Co.'s 1991 acquisition of Lawn-Boy, Inc. was strategically designed to help the lewnmower maker compete more effectively against John Deere & Co. Jacob-

sen and other players Toro furthered those efforts than year by adding finished-goods satellite warehouses to improve ship ping eycles of its lawn and turf products, snowblowers and irrigamat or in real time." Cabillot said Rather than implementing wholesale changes to its electronto networks. Toro is taking a pragmatic approach to its system rede-

sign. Toro has suffered from weak financial performance during the past few years due to poor market conditions for consumer durables. This situation has forced the company to restructure, keep its altocations for information systems flat and limit its development of PC and LAN systems. Hansen said.

in fact, Toro instailed its first electronic-mail system only bust January to support communica tions among its 1,200 manufacturing staff-

"Management has historically been conservative In adminstrative and MIS spending," said Hansen, who joined the company five years ago after heading up application development for operations and logisties systems at Pillsbury Co. Besides. Toro has only a

70-person IS staff serving 4,000 corporate users, so it can ill-afford to distribute the hulk of its resources to retrofit its

ny is overhauling its finished goods distribution manage system one piece at a time. "We

tion equipment to mass merchants such as Wal-Mart Stores, Inc. and Now the \$684.3 million firm is need to enable our business neers ding on those efforts with a to have much more scores to information than they have now. Our instrategic initiative to establish etronic commerce connections, formation is not nearly accessible including electronic data inter enough today, but we plan on takchange (EDI) capabilities, with its customers, according to Steven P. ing an evolutionary rather than revolutionary approach," Hansen Hansen, Toro's director of infor-

For mass merchants, electron

ie commerce is an invaluable rement," said Raymond E. Cahillot, a consumer products analyst at Piper Jaffray, Inc., a

Toro's Staven P. Hansen: Husiness users need

more access to information n equipment to mass merchants

The Home Depot, Inc.

peapolis brokerage house. saity because the larger companies like Toro don't want distributors calling them about price changes. They'd rather receive

dahl Corp. 5890-300E plug-H-based IBM CICS and IMS ch applications. The fini eds distribution system is being fied to incorporate EDI for

Messaging users switch to RISC servers

By Lynda Radosevich

Faced with PC-based electronic messagi servers that don't scale well, users are in-creasingly turning to RISC-based hardware to run their messaging systems, according to some users and industry watchers.

The move is driven by the fact that electronic mail is becoming the enterprisewide platform for other applications, such as forms routing, pro-

automation and group calendaring and schoduling. The switch to higger servers is necessary to provide performance, reliability and a single point of administration, observers said.

"Scalability, redundancy and reliability are big messaging issues. We have to find a way to solve the network systems management problem, and we certainly can't do that with DOS or Windows PCs." said John Gustelson, information technology specialist at 3M Corp.

The advantages that bigger servers have over PC servers - a capacity for larger databases, more memory, better performance and fault tolerance - are not unique to E-mail but they can significantly enhance E-

mail operation. For instance, WordPerfect Corp. announced at Comdex/Fall '96 a version of its Office measaging software that works as a Novell, Inc. Net-Ware Loadable Module on Hewlett-Packard

of the RISC station can manage an estimate 500 users and 20 messages per second vs. 250 users per post office and one message per second on a DOS-based 486 computer, according to a WordPorfect engineer

BellSouth Telecommunications, Inc. in Birningham, Ala., found that Lotus Development Corn's DOS-based CC:Mail post office servers

The great divide

overs said they expect the mess divide into lower-end and higher-end server market did a few years ago. At the higher

> can handle only a couple hundred users per server before speed performance dips below an acceptable level; according to Julie Perris, a

BellSouth strategic planner "One division's CC Mail base went from 1,000 to 3,000 users, and the management issues the are dealing with now are almost killing them

she said. The issues include the technical and

Apple makes Newton announcements

dex/Fall '83, Apple Computer, Inc. thought it was time to announce a bevy of developments regarding its portable Newton MessageFad. They included the following:

▶ A staged introduction of NewtonNail will commerce immediately, with full commercial release in the next 60 days. A recently issueded test pilot will be followed by a limited commercial release to Newton users who sent in recouse cards packaged with the Message Pad. NewtonMail enables Newton users to ex change text messages with those on Compu-Serve, America Online, MCI Mail, AppleLink, SprintMail and EasyLink, as well as other online services accessible via the internet. Gen-eral availability will begin in early 1994. Pecs will start at \$8.95 per month.

▶ The Newton Connection Kit for Windows b gan shipping last week. The application en-ables information to be exchanged between Pad. The package costs \$165

-Also shipping is the Fax Modem Card, whi allows users to communicate via NewtonMail and other on-line services and to send faxes anywhere. The rotall price is expected to be about \$220.

P-Apple also announced an agreement with Megahertz Corp. in Salt Lake City to produce a PCMCIA modem for the MessagePad. The mo-dem will slide into the Newton's PCMCIA slot to give it fax capabilities

Also displayed was a new family of remote access products. The \$1,790 Apple Bemote Access Multiport Server, \$249 Remote Access Per-sonal Server and \$69 Remote Access Chiert al-low users to access information and services over a variety of cornections, ranging from telephone lines to cellular phone links. Apple will also deliver a remote access client for Win-

Net server speeds the answers to FAA planners The original plan for addressing the situa tion was to get a faster modem; say 9 6K bit/see. However, this would only provide a slight

throughput improvement and did not address

the printout and manual input limitations

nes the simplest way is not the best way. as the Federal Aviation Administration's Aviation Capacity Branch has discovered

The branch, residing at the PAA's Technical Center in Atlantic City uses an IBM 3090 mainframe to run complex tions of airport traffic seenarios under a variety of conditions. The results of those simula tions are fodder for a series of aprebensive studies that analyze current airport and airspace

conditions. Airport management and com missions also use them to plan for craft capacity and flight volume in the future. The studies factor into account every conceivable factor and condition and take be-

However, staff productivity was suffering because of a traffic bottleneck created by the 2.4K bit/see, modern links between the center staff's PCs and the mainframe, according to Andy Lamb, computer specialist at the

The staff would end up poring over a printout its, which would use betion's rest tween three pages and a whole box of printout paper, depending on the simulation program, how long the simulation was running and what printer options were available, Lamb said They would then have to manually reenter the data into a PC-based spreadsheet program for

instead, the center set up an IBM LAN Server on OS/2 that communicates with the mainframe

and with a Sun Microsystems, Inc. SPARC 2 orkstation, using Sun's Network File System (NFS), Users can copy files from the mainframe to their own PCs or to the Sun system nero drives on the LAN Server. They can also use the X Window System to view graphics scenarios on the SPARC 2. All of the systems are connect ed via TCD/ID over a 10M bit/see Ethernet with network interface cards supplied by CNet Tech nology, Inc. in San Jose, Calif., and 3Com Corp.

Under the new system, users can create siminput files on a server drive then tell (be mainframe, over a TCP/IP Telnet link, to access

those files and run the simulation. The output files of the simulation, which typically are

about 2M bytes, can then be downloaded to the LAN Server via NPS over Ethernet in about 20 seconds, compared with the two hours it took over the 2.4K hit/see modern link, Lamb said Users can copy the files from the main

frame's M drive to the Sun workstation's N drive on the LAN Server then use the Teinet link to the Sun workstation to "fire up a graphic simulation" and view it over an X Window connec tion, Lamb said. The simulation is animated, showing airplanes taking off, landing and texting to the gate, he added.

From an hour to 30 seconds

Furthermore, rather than getting a whole printout of the simulation results, the user can copy the relevant pieces directly to a Lotus Development Corp. 1-2-3 spreadsbeet, Lamb said This reduces the time it takes to load the num-

bers from an hour manually to about half a min-The Aviation Capacity Branch has also up-graded its users from 386-based PCs with 4M

bytes of RAM to 486-based PCs with 16M bytes of RAM. In addition, the center installed Lo 1-2-3 on the Sun workstation so that if users spreadsheets overload their local PCs, they can copy and paste the spreadsheet from their workstations to the Sun system in an X Windows system then run the program on the SPARC 2, with its 128M bytes of RAM, Lamb

ty teams will be more responsive and accurin the reports they send to the FAA Capacity Office in Washington and to airports under study.
"We suggest alternatives; it's up to the airports what to do "be noted.



Challenge To fint a room officient, less en proper way for airport capacity design team

members to download and analoge the results. of air troffic simulations. Systems, Inc. hubs, IBM AN Server, OS/2 work stations, Sun SPARC a graphics workstation.

TCP/IP, Teinet and Sun's NFS communications Results: Cut lietal time for downloading simula tion results from hours to seconds; elimented manual reentry us-a



analysis, Lamb said. This method was time-Massively parallel processors

Clustering takes stage at supercomputer show able parallel processing system. Con-

in Santa Clara, Calif

By Effis Booker

While massively parallel processing (MPP) machines are gaming respect ability as commercial computing platforms, advances are quickly being made in she science of logically configuring powerful workstations across ctremely high-speed LANs.

IBM. Hewlett-Packard Co., Digital

Engipment Corp., Silicon Graphics, Inc. and others demonstrated this "claster" approach to parallel computing at the recent Supercomputing '83 show in Portland, Ore

Although clustering is appealing because it promises a scalable way to do narallel processing with existing hard ware resources, MPP vendors pointed out it is limited principally by two fac-tors: The available speeds of LANs and the "intency" problem, which refers to the idle time one processor spends waiting for an instruction or a piece of

to be delivered from another. One exception among the MPP may sayers is John M. Harte, president of supercomputer company MasPar Computer Corp. in Sunnyvale, Calif. Harte would not dismiss the competitive threat and said clusters would indeed be suitable for some kinds of highperformance parallel computing. "For eral-purpose jobs," he said. "MPP will run bend on into the huzz saw of

200-MHz workstations connected by ATM networks." Mode (ATM) was, in fact, the

hot networking topic Booth displays Arguably ahead on the cius

tering curve are partners Convex Computer Corp. and HP. They have announced bybrid systems for HP Apollo 9000 workstations linked to Con HP's chaster product rans special

software developed by Convex. HP's booth featured four HP 9000s linked via a Fiber Channel Extended Industry Standard Architecture adapter board

running a parallel application. Also at the show Convex annou. a software environment and MPP deand tools for its Evenneles seek

applications to its supercomputers, which use HP's PA-RISC technology. ATM trial strating the ties of ATM, et, the show flear

data network at percomputing '93 ATM as its ne for the

acle occurs."

are recognizing that legacy systems are ont of gas," said Paul Koontz, director of marketing at the Supercompuler tems Division of Silicon Graphics, Inc. in Mountain View Calif. On the other hand,

"The wonderful

thing happening out

yex said the environment, which has a

scalable operating system that is bina-

ry compatible with HP/UX, will case

the porting of off-the-shelf and custom

nagging migration issues results. Or as James R. Kasdorf, director of supercomputing at Westinghouse Electric Corp. in Pittsburgh, framed the problem: "Phase one is your legacy mainframe runningCobol. Phase three is an MPP running an object-oriented relational database. Phase two .. a mir-

RISC

CONTINUED FROM PAGE 35

administrative headaches of setting up m and address list exchanges among many small post offices and losing messages because of the inability to track mail across so many

To avoid those problems in the future, Bell South has chosen an X.400 messaging platfe based on HP's HP 9000 workstations and HP's OpenMail messaging software. It gives the company a scalable messaging backbone with centralized address and messages stores and management capabilities [CW, Nov. 25].

According to Terrence McCarthy, managing di

rector at Neoteric, Inc., a messaging and work-flow systems integrator in New York, users are moving much more quickly to RISC than expeeted, due in part to the increasing popularity of X.400-based messaging servers on RISC box-es from SoftSwitch, Inc., HP and Digital Equipment Corp.

"If you are using messaging as a critical service on which other services reply, you don't want that to go down. So in the same way you see these bulletproof machines used as file servers, you'll see them used as messaging servers," said Mary Petrosky, an analyst at The Burton Group's San Mateo, Calif., office.

Guess Who's Got The World's Most Popular TCP/IP Network Software For PCs?

If you guessed SunSelect" and in PC-NFS* networking software, you're right. Every day more companies of all sizes - in the United Szaze, Europe, shis and beyond - are choosing PC-NFS software to connect PCs to their TCP/IP networks. Because SunSelect is a Sun Microsystems business, these companies know they're getting the product strength and support they need.

ure products changed and suppose they access
With PC-NFS, PC users working with
variety of MS-DOS' and Microsoft Washows
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called its Jun, And Mostlers everywhere are able
to communicate effectively and get their work
done fuser.

Soccessful companies from the Fortune 500 to the shop next door are raving about this popular TCP/IP solution. With the aboustages of reduced runt-time costs and higher productivity, raway companies are able to downine their network resources. What's more, PC-NFS has received uprating from both LAIN Maguzine and Je6H4641 Aw well as an endoorment from Microsoft.

Feature-rich PC-NFS includes:

- NFS[®] and TCP/IP that are fully integrated with MS-DOS and Microsoft Windows;
- Microsoft Windows networking applications such as FTP and Telnet plus on-line Microsoft Windows help;
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- applications;

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- Microsoft Windows;
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- Compatible with MS-DOS, Microsoft Windows and Windows for Workgroups;
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Newspapers to go digital

By Gary H. Anther

Iwo major papers are taking the ek smedge out of the daily

Some of the news that is fit to print will soon be available elec-tronically from The New York Times and The Washington Post. The Pimes said recently it will work with Nynex Corp. to develop an interactive fax service that will ed news and other information to subscribers at times and piaces

The prototype service will em ploy store-and-forward technol

ers the opportunity to receive artieles on topics of personal interest,

no matter where they happen to be at the time," said James A. Cutie. president of The New York Times Co,'s Information Services Group. About 1,000 customers will partic toate in the market test next

ring the Times said. The Times and Nynex said they will work with fax equipment pro-viders to develop the service and to develop a low-cost fax printer The Washington Post Co. sned it was establishing Digital ink Co. a subsidiary that will hring the Post to subscribers via fax, computer and telephone. One of the first offerings will be an online version of the Post, scheduled for debut next July. This will allow subscribers to communicate with one another and with newspaper staffers via electronic mail, socording to the Post.

Electronic choices
The first will roll out other electronic products based on its editorial pages and information from affiliated husinesses such as Newsweek magazine, the company's broadcast and cable divisions and its Legi-State government in-

The products will combine text graphics, photographs, moving pictures and sound. They will be available via computer, cable television and wireless communications devices, according to the

system. Hansen said he ex-

pects the company to expand its ability to send out-

bound inspices to retailers

Only a fraction of those are

handled on-line today Ster-

ling also provides Toro with

EDI transmission through its Orderset service.

Hansen said the project is

beingoverseen by an EDI ex-

ecutive review board, which

includes the general managers of Toro's divisional busi-

ness units, "Getting input

from top management throughout the company is

essential to the specess of

the project so that we're all

on the same page in terms of

making sure the system requirements are met," Han-

He said the electronic commerce instintive is not

intended to save costs but

Hansen said. He added that 75% of the company's orders are routed to them electronically And as Toro adds EDI standards to the

Nextel gains Motorola licenses

Extes gams woutproven strenges stretchemmanications, inc., a radio dispatch supany with plans for broader services and artests, recently acquired more than 2,500 cetailined mobile radio liosense in 21 states from oteroin, inc. for \$1.6 billion in stock. Nextel plans to mbine the local Motorola systems with others is ready owns to create a digital network for voice

AT&T, Mead Data unveil news service

AT & Tagying Services and Meed Deta Central, Inc., owner of the Nexts information service, have introduced a service that filters and transmits news stories to electronic mail boxes or fax machines. The Pubbles service drops as electronic table of constent from one of more than a doors general interest and technology tride publications into a subscriber's AT&TRAIL E-suil box. Users pay an annual EDS

Companies enter ATM market

Screeystems Corp. and Newbrid ave teamed to develop Asypchrot Networks have teamed to develop Asynchronous Transfer Mode (ATM) products. Both companies o enter the ATM adapter, workgroup and enterprise switch markets with their own products.

FCC cites toll fraud liabilities

exchange (PRX) and telephone toll fraud policies that holds customers liable for losses. Commission members suggested that manufacturers and carrie have an obligation to provide more information to customers about the possibility of toil frand, which caused an estimated \$4 billion in losses last year.

ATM specs and trials emerge

Belicore, the research arm of the seven regional Bell operating companies (RBOC), has issued drements documents for the RBOCs deploym of ATM permanent virtual circuit services. Permanent virtual circuits require users to know with whom they will be communicating in advance and "nall up" communications links with those sites. Subseque switched virtual circuits will allow customers to communicate with others on the fly.

Superhighway ethics More than 70 public interest

sications Policy Roundtable, a coaliti devoted to ensuring universal access to the digital "information superhighway." Focusing on issues such as privacy, electronic democracy and affords use by disadvantaged groups, the coalition bopes to balance the commercial interests embodied in rece

NetView association gets
IBM and Digital Equipment Corp. said they have
completed combining their organizations for
recruiting and certifying network and systems
management application wonders into a single

Embarc welcomes PDAs

proin's Embare paging network has added support for three personal digital assistants; the Tandy Z-PDA, Casto Z-700 and the Grid 2300. This means users of these devices who subscribe to Embare can receive one-way electronic mail and various information services via the Embarc netwo

Lawnmower maker

CONTINUED PROM PAGE 56

mary retailers. "Major logistical changes were needed to support mass merchandiser requirements like

quick response," Hansen said. Until 1991, Toro had served all of its North American distributors from one warehouse in Lakeville, Minn. But additional distribution channels for Yoro products accelerated the company's need to set up stellite warehouses.

Toro programmers wrote the original EDI applica-tion in 1987. Now they are reworking that package to help Toro serve its wider distribution channels. Toro retailers have used the EDI system for parts ordering. but it was developed before EDI standards such as the ANSI X.12 standard had matured.

The existing EDI system will be amended to include features such as invoices for parts replacement, which is currently paper-based. Hansen said invoices that have historically taken four to five days to turn around with eustomers will be processed overnight

once the features are added to the EDI system.

The Toro-developed features will be aided by translation software called Gentran from Sterling Software, Inc. Hanson said Toro has committed \$800,000 to the electronic commerce projects, with \$500,000 to earmarked for each of the next few years. Toro's retailers are connected to the proprietary

The Toro Co.

Goah To extend its exist ing electronic commerce susteen to meet wiven such as Wal-Mart.

egy: Amdutel s Roo-yood main/rame, software IRM CICS

rather to improve Toro's service and responsiveness to its customers. riced at \$6,995, the company said.

Microdyne (703) 739-0506

Socket Communications, Inc. has introduced Page

Card a dual-mode wireless messaring device. Page Card combines a stand-alone LCD alphanumeric pagerwith a universal PCMCIA interface and can be used for automated business messaging. It interfaces an interest with electronic mail acheduling surroads sheet and word processing software when used with send/receive messaging software for Windows. Cost under \$495. Socket Communications, Hayward, Calif.

erodyne Corp. has unveiled the 3270 Workstation

for Windows SNA Gateway, a Windows-compatible IBM 3270 emulator According to the Alexandria, Ve., company, the product is a member of the SAA Solution family of

hardware and software products for Novell, Inc.'s NetWare-based networks operating under IBM's Systems Application Architecture. An object-oriented configuration utility that includes all the elements needed to set up a bost session

A single-user license costs \$396; a gateway license



YOU KNOW HOW SOME THINGS ALWAYS LOOK GOOD FROM A DISTANCE?

As anyone who's ever been in the desert can tell you, things aren't always as they appear. Whether it's

usable applications. All of which truly complete the desktop of every Windows™ user.

And while Microsoft claims LOTTIS SMARTSLIFF 21 WE MICROSOFT OFFICE PRO APPLICATIONS Office is going to fully maximize cross-product integration and INTEGRATION consistency. Lotus is already way down the road to achiev-WORKGROUP

an oasis in the sand. Or a suite of application software in the office.

Unless you look very closely, for example, you'd swear Microsoft® Office was a revolutionary new way to use manipulate and share

business data through integrated software. When,

same user interface. With common menus. And

ing precisely that across all

five applications. Sharing the

MAYBE YOU'D BETT LOOK AT MICROSOF

VALUE

in reality. Lotus® SmartSuite® achieved that distinction

A closer inspection will also demonstrate that not all of Microsoft Office's five applications are designed for general business users. And some new versions aren't yet available

over a year ago.

at all Lotus SmartSuite on the other hand. has five of the leading award-winning most Smartlcons.* To say nothing of task-oriented

functions that cross applications. Collect and Copy for instance. With a single click it lets users gather data from 1-2-3° and Freelance Graphics® and combine it into an Ami Pro® word processing document.

Of course, you might be just as easily deluded into believing that Microsoft Office is work-





ER TAKE A CLOSER T OFFICE AFTER ALL

group enabled. When, in fact, Office can only

group enabled. When, in fact, Office car integrate applications, SmartSuite can actually integrate entire groups of people. With Lotus Notes* groupware. SmartSuite users can access, share, track and manage business data like never before. Not only can it be routed.

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it can be revised stored and accessed concurrently

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Client/server gains more tools

A lack of systems management tools designed to minister to client/server systems has kept some users from putting such schemes into production. However, relational database makers have begun to address the problem by teaming up with historically main-frame-oriented utilities firms such as BMC Software. Inc. and Legent Corp.

Oracle Corp., for example, has promised to release programming information about the Oracle 7 data-

base, Inc., meanwhile, has been working with

Inc. has said it is seeking similar deals for i Troti Systems, inc. since 1981 to develop a framework for ctiont/server management tools that would rival mainframe cousins in functionality. And informix Software, Inc. ontlined elient/server management plans inst week.

Although datah

versions of existing performance monitoring, ea-ity planning and other tools to Oracle. The ASK

ted to bear fruit until mid- to late 1994

Other elsent/server advocates, including ap-plications makers such as PeopleSoft, Inc. and IMRS, Inc., have shrunk into the background

gest, Inc. in San Jose, Calif.

HP responds to user requests on 3000 line

PALOALTO, CALIF

Three weeks after raising a few cycbrows over its iong in proprietary minicomputer commitment, Hewlett-Packs Co. has ameliorated user concerns by outlining a solid d loadion to the box and its MPE/IX operating system.

The company told HP 3000 users in a private broadcas on Nov. 18 that its next-generation MPE/IX — Version 5.0— will be available in May and will include a number of near nested features, according to Eric Fisher, principal a

Pisher Systems Consulting in Groton, Mass Furthermore, HP said it will today add a de machine to the midrange of its HP 3000 line and will offer users a board upgrade to that box, called the Series 867/200, for a third the price of the system. The company priced a 100-user version with 64M bytes of memory, 1G byte of ster age and four I/O slots at \$195,320.

An HP spokesman confirmed that HP will ship MPE/IX 5.0 in the spring but declined to commit to a month.

in us spring our occained to commit to a stouth. In one warmly received more, IP told ouers that 5.0 w return to beckup procedures built into MPE/IX 4.0. HP ha sot off a ruckus when it switched to backup procedures w the intervening Relense 4.5, Londing 4.5 s few users to ces plain about storage and backup difficulties [CW, April 12]

ASK enhances Ingres database By Kim S. Nash

oup, inc.'s obd The ASK Go

ew-on to Ingres 6.4 — renamed Open-expected to include additional gate-Ingres - is corp. e to help Unix users get at data housed in IBM mainframes, support for Open Databa Connectivity (OOBC) standards and a distri pany said. The products are sisted to ship in April 1994 [CW, Nev. 15].

The higgest news here is that ASK is show-ing they fully support the ingres side of their business. They're not going to let it flounds said David McGoveran, president of Alternat Technologies in Boulder Creek, Calif.

The ingree database and add-on tools sport strong technology but have lacked a powerful marketing organization to back the products, McGoves said, echoing-statements from uners and other analysts.

Openingres and accompanying products should relieve ingres users who may have been concerned that the ingres database was falling behind competitors such as Oracle Corp. and Sybase, Inc., added Paul Cubbage, an analysi at taquest, Inc. in San Jose, Calif.

Ingres bolds 12.5% of a \$1.4 hillion worldwide rel se market, compared with larger chunks for rivals

ation put in place this year. W rly had separate sales, mark





ution of multiple transactions

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cale department store with isveriors and attentive staff can't ke money selling \$5 plastic house-res. Low-priced products sell in plea ty, but they require less expensive sales channels and service policies to be prof-

This principle applies just as well to r systems, and it suggests some hard adjustments

ac prices of large and midrange open systems have falln to a fraction of their mid-1960s levels for familiar rea-ons: standardization, adoption of low-cost PC technology and dramatic advances in processor design. Competitive from open systems has backed proprietary syse corner, forcing vendors to slaab the exant premiums (five times or more those of just a couple of years ago) that they charged for hardware, software and

y; Hewlett-Packard and Digital offer proprietary ot lines priced near parity with their Unix systems an e-performance basis. The AS 400 may be next, outling nore deeply into IBM's locrative commercial business.

support dors adapt to their bargain-basement pricing covint, 18 managers face diminishing pre- and post-sal rt. Of course you save on the front end and in many ising moves as well, but if the out-of-po sts for installing, integrating and supporting new bard-

suble and triple, those savings will quickly vanish omputer and database server customers can exp the same changes PC buyers started to experience six or seven years ago. Vendors will target smaller direct sales orces and support teams at the largest national

It seems unlikely that we will ever be able to buy a VAX at everyday low prices at Sears, Still. Sun now has a mail-order g for low-margin expansion products and HP is dising workstations through specialty retailers such as gont Electronics. Customers can even order Silicon indigos over an 800 n

se cut-rate approaches have met with so se traditional workstation customers can install and their own systems. But larger systems aren't so sy, and the user population isn't as technical. Corporate s need more service, and service means head count.

Right now, a department of 250 people might require only ne mainframe operator, but that presupposes the operator as access to vendor staff for installation, preventive mainance and system software support. PC LAN administ ance and system software support. PC LAN administ a might be able to serve one-third as many users and dn't pay their vendor enough to assist them on site, he result is that today's network administrators are

highly skilled, have more job mobility and demand higries (no 5.4% last year) than maint ers (up 3.2%)

ng up to handle chores the vendors used to perform sn't a happy prospect, but it might be prefe proprietary systems vendors for access to their staff for a couple of reasons. First, these vendors may not really want or be able to handle the business anymore. And second. companies that go in for service revenues may beve such poor profitability that they won't be able to offer the intest

Krum in a senior research analyst at RCB International in Standard. Coms. He can be reached by E-mail at Todkrum's sol.com.

Talking computers take on tougher tasks

a Talking computers are not just the stuff of sci fiction movies. In fact, some data centers are us voice technology for tasks ranging from opera the help desk to broadcasting system outages.

"It's available and very effective," said Arnold P ber, president of consulting firm Farber-LaChance in Richmond, Va. "Voice is a very naturalinterface and I think we'll

he doing even more with However, Parber and users warned, it is not essarily a no-brain-170 takes a little while to get

down. But once you learn it. it really belps improve utiliza tion of the system." Most of these systems attach to the mainframe through a PC

or some other means. Through these, help desk operators data center employees and others are able to "bear" what is going on inside the machine

anadian Tire Corp. in Toronto uses InterVote Inc.'s systems to assist the help desk in resp more quickly to and-user requests to help autom cally change or reset user IDs or restore printer ope ations It also allows Canadian Tire to broadcast gen-

'It frees up help deak operators to do analysis a blem-solving," said Diana Miller, manager of service quality. A menu guides users through the se tion process and allows them to opt to speak to a hu-

It has been a learning experience. "We thou would start off with a nice easy application, user IDs Little did we know," Miller said. That process did not prove to be simple to automats. "We hit a brick wall because the options we had to automate with turn out not to be easy for the customer. You have to know the customer what their limitations are and who

It will be easy for them to use Still, it can be worth the effort, Leab Larson at Computer Sciences Corp. in Fort Worth, Texas, programmed the voice-response unit for the help deck.

"We've automated 55% of our calls. That may not seem like a lot, but we are accomplishing more with less. We've had to increase our staff less than what we would have had to based on the number of calls we

ATAT'S NO.

AT&T's western cans occurred the series going across stant console in the command order into speech ast seemed pretty good at the time," said Rick handles technical planning at AT&T in Pleasanton, Calif.

"So now you've got a sound and you can turn around to see what's said, the choice of five voices with the unit was not sufficient

up with 'Sven,'" Reynolds said. "It's got a thick Swedish accent, and even with the bees turned way off on the

cretand it all the time. If the voice unit is being used to broadcast system ges in the data center, it is important that imple cose the amount, length carefully pick and d type of messages that are broadcast. "If you keep saying something over and over again, people stop paying attention," said Julie Hawkes, manager of VM systems support and automation at Rolm Corp. In Santa Clara, Calif. "It's human nature."

Roimsolved this problem with a system called Com-ensa from Votek that allows users to broadcast difrent messages to different places. "The console om wants to know systems status, but the help desk doesn't care about tape mounts," Hawkes said. 'You have to think about what kinds of announcements you at to make." She said it may be very affective to agers' voices for some and er options include sounds like train wrecks or our

rashes to signal a major system outage.

Another use of voice technology is to attach the mainframe to some kind of paging system that anto-matically dials the on-call person as a soon as a batch program abends.

HP

CONTINUED FROM PAGE 63

do that," they made the change," noted Jerry Ke manager of MIS operations at IVI Travel, Inc. in Northbrook, Ill. "They listened to their users. Other enhancements included in 5.0 are support for

2,700 users, support for Microsoft Corp.'s Object Database Connectivity, fast and wide SCSI, 5G-byte tape drive support and built-in Posix training. But while users lauded HP for the planned MPE/IX onts, the broadcast's most polgnant pro-

norment came in regard to longer-term plans. "I have never heard this before, but when peowere asking what is beyond Release 5, the HP people said absolutely, positively, they're working with ir sx [an HP user group] and customers on systems im provements." Fisher said. "Is there tife after 5.0? Ab-

While HP constantly expresses support for the

ter all, the higher-growth sector HP often adds power to its HP 9000 Unix minicomputers before making companion moves to the 3000.

Today's 987/200 unveiling comes five months after

Padded a similar machine to the 9000 line. And earlier this month, when KP unfuried its topof the line mainframe alternative minicomputers, topped off the 3000 Edition at eight processors whi ng the 9000 to 12, rekindling some concerns

pushing the MRU to 12, reamoung 60ms conscerns among 3000 seers sensing abandonment. HP said the HP 3000, with its more robust MPE/DX operating system, is a more powerful system requir-ing fewer processors than the IP 9000 with HP/UX. Users said they are confident in HP's commitment.

"If long term means 20 years, I don't see it," Ko-pecky said. "But if long-term is five to night years, I'm tisfied I'll have a 3000 in the long term

What users are less certain about is how long HP will continue to offer MPE/IX and HP/UX as two sepsrate operating systems. MPE/IX, with its Posix con nce, is moving more into the Unix world, alti er-performance operating system with



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The 30-minute risk analysis

in the time it takes you to gobble a turkey sandwich at lunch. Don Erwin can pinpoint the security holes in your system. Erwin, a security analyst at Dow Chemical Canada, Inc., has beliped develop a way to take the terror out of systems risk analysis, which is often perceived as a lengthy, expen-sive affair that outside consultants perform with minimal

The result is that you've got a bunch of end users wh tand or want the recom who are lax on following up on the rec

He and his cowurkers in the Midland, Mich., offices have rested the Risk Analysis Matrix to develop a subjective isk assessment and action plan. The matrix is cheap, cre-ted by end users and can be completed in minutes.

ated by one titler unNo way, you no.

Devis would disagree. The Risk Analysis Matrix is not
only a staple of Dow's security program, be thinks it should
be a comercions of yours. "A lot of systems measurers that
security to be a damning proposition and don't know where

to sister." Erwin anys.

Bocurity conceilants have praised the Dow plan for its
ability to provide perspective. "Security consultants concetions give the initiation impression to the contions give the initiation impression to the contection of the content o

unarysis Matrix is conentially a grid question and our chart that lets users bone in on what needs pro-ing Brwin first chantifus protests.

He quickly eketches out the matrix on an overhead or flip and take each participant to think about the risks as-ted with each square in the matrix.

re. Contributors must not feel intimidated in voicing

Chemical's 30-minute security analysis involves using ices to identify, rate and suggest solutions for probin



| Acciental acts | Edit (meching) that checking Checks and belonces | Som dynablytics Acres control Supreption Physical socially | 100 mg | Arthur put stad |
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| Deliberate acts | Paraweth Sign-ons Audit | Patronit Spece Water deposed Samp presents Six security | Of-six strage Seater plan Physical security Emergency procedures Security specifications | Canada and account |
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The \$3 million to \$5 mil-tion project is due to kick off in 1995 and run for three

The process is repeated for each of the other squ harming the integrity of data because of deliberate acts, manthorized dischange of data as a result of an employee cidental not, etc.) until the chart is complete. Participants then come up with controls that would address each of the security holes. Example: Sensitive docu-

diving. Or a tape backup system may need to be devel in case the main server is accidentally fried by elect working on the building's wiring system. Some controls may

ich several boles at once, Erwin said. Toam members are then assigned responsibilities to imnent the various controls. Because the end users choose the controls, there is a greater chance of their being accept-

ed and implemented, Erwin said. it is then up to management to decide if the costs to pre-vent these risks are higher than the risks themselves. "But at least you have taken the first move toward getting your arms around the problem," Erwin said.

Client/server tools

CONTINUED FROM PAGE 63

mance tuning, backup and recovery and other management tasks commonly handled by dis-crete tools in maintrame scenarios. The World Cup 'bi is constructing a large cli

ent/server system to handle press and attended queries over a wide-area network stretching across nine time zones. The system was designed to funnel and respond to requests from 1,000 concurrent users.

Much of the systems monitoring and man agement has so far been done using features of Sybase's System to database and add-on tools. according to Bud Bensick, a vice president at Electronin Data Systems Corp., which is han-

zaccrona Data Systems Corp., which is har-ding systems integration for The World Cup.

At a conference in Cupertino, Calif., last month, dabbed Software Independence, execu-tives from Sybase and Oracle as well as Than-ders Committee. In and Martil. Inc. (1988) dem Computere, Inc. and Novel, Inc. talked about systems management plans and how to make software more open and easier to man-

the vendors seemed frustrated by a lack of product specifies. One user noted that when all was said and not done, it is still the user's ones was sean and not done, it is still the user's owns to get systems from different vendors talking to one another Partnerships among database companies and systems utilities firms are an attempt to quell that sentiment (see chart

page 63).
Vendors frequently blame one another when
a user calls in with problems, according to Brian Sommer, an analyst at Andersen Consulting. It's the 'who do you shoot?' problem," he so

various vendors. When glitchen occur — a not-work goes down, a database catabase— users have a tough time getting help unions they can pigeonishe the problem to a specific product, he explained. "Everyone seems to know (cli-nut/server systems management) is a problem, but there's not of finger-positing geoing m." "I don't have a good answer" to the systems

management question, said David Cochran technical coordinator of architecture at Atlan-ta-based Delta Air Lines. Luckily, Cochran does not need an answer

now because the airline is still in the pro-ing phase for many of the missionmely reserve to sunity or the mission-critical clicativaries reystems planned, he said, Debta is using Sybase is System til database products to anchor its officint, which include internal co-porate applications such as buman resources and external airport systems such as gate agent information.

Cochran said he will watch Sybase for sys-"Client/server isn't as easy as you think," said John Van Den Hoven, manager for data base and enterprise information systems at No

Date and ensurprise mormanion systems as re-rands, inc.

The Thronto-based company has taken a stab at a few contained, departmental el-cunivorver projects in the Hewlett-Packard Co. HPUX environment but has basically stalled more ambitious client/snevue efforts until tan-gible management tools arrive. Purthermore, Norunda is looking for tools that conform to

Computer model simulates car crashes

brough windshields is ex-ensive and time-consum-ng but it has been the only

al Motors Corp.'s Research and Development Center earlier this month could

said they hope to work to-gether to develop a comput-or model that integrates the

simulations. The proposed model would run on Cray Research, Inc. supercomouters at Los Alamos. Vehicle damage and huint today but are studied separately. The hope is to

years if Los Alamos gets the OK from the Department of Energy's Defense Programs



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Users test Sterling's Solve: tool set

By Jean S. Bozman

Sterling Software, Inc.'s new Solve: series of object-oriented systems man-agement tools, unveiled last month, promises ease-of-use advantages over the tool set it replaces, the procedural code Solve: packages. Sterling got those packages when it acquired Systems Center. Inc. in Reston, Va., earlier this year

[CW, July 5]. The new Solve: series has four comp nts for problem management, change management, configuration mana ment and asset management, said Miel Matthews, vice president of marketing at Sterling's System Management Division. The modules are priced at \$25,000 apiece for use on midrange IBM mainframes. Prices vary by processor

size, he said. Some Sterling users who have seen early versions of the product said it looks far easier to use than the procedural code products, which have complex

Going Down Under Loastine Sterling NetMaster site Tele-

com Australia in Melbourne has been ting the new Solve: code for a year, and it plans to put it into production next month. The object-based code allows each of the Solve: modules to swap data with the others, said systems thanagement engineer Nick Lukies. "I can reuse the code in the scripts,"

Lukies said. 'The real advantage is when you use the [modules] together, there are no real boundaries between them. We end up with applications that are divel-oped quickly, with greater functionally." "I think it's very user-friendly," said

a mask it a very user-trendly. Said Jackie Morris, manager of technical sup-port at Lomas Information Systems, Inc., a mortgage services company in Dallas. "Users can quickly write a script to do searches." Morris also liked the ability to Lomes uses Sterling's NetMaster, a network manager designed by Systems Center, and IBM's mainframe-based Info-

Man for systems administration, Morris

The object-oriented technology in the Solve: software anticipates the use of objects as agents for enterprise systems ment by the mid-1990s, industry

analysts said. Sterling chose to build its own objectoriented system and enterprise data re-pository rather than use industry-standard C++ and the Object Management

Architecture spec, analysts said. The analysts said the four Solve: packages will compete with IBM's InfoMan as

well as Computer Associates Interna-tional Inc.'s NetMan and PNMS from Peregrine Systems, Inc. in Carisbad, Calif. Solve: runs under IBM's MVS, MVS/ESA and MVS/XA operating systems but has

not yet been ported to Unix systems, an alyste noted.

Matthews said users can expect a Unix version, along with support for Microsoft Corp.'s Windows 3.1, in the next release.

due next year. The new Solve: software has been available for several weeks but is in use primarily at beta sites. "I would some em to be in an early release," said Bruce Allen, a vice president at Meta Group, Inc.

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Candle Corp. has announced Omega on II for CICS Version 100 and Om mon II for DBCTL Version 110, perfor nce monit lors for on-line transs

According to the Santa Monica, Calif., company, both products incorporate a Common User Access interface and are rated with OmegaCenter for the solex, an enhan-

of Candle's integrated solution for en Omegamon II for CICS of context-sensitive help and third-part

Pentures for Omegamon II for DBCTL include a Common User Access inter-fade, single point of control with Tran-pley Navigation, historical reporting and transaction-reporting facility.
Omegamon II for CICS prices ran

from \$43,000 to \$97,000; Omegamon II for DBCTL ranges from \$28,500 to \$54,500. **▶** Candl

iawkeye Information Systems has an sounced Release 7.0 of PathFinder, doccentation and analysis software for TRIMP & AS/AGO

According to the Port Collins, Colo. company, PathFinder offers a cross-ref-rence "refresh" function for libraries that automatically documents all object residing in that library, cross-referen tory information that includes CPU to need to build or refresh the crossreference files; and a scan source in ber option that has been enhanced scan by date range and our scan a spec

fied source type.

A grid report that provides a matrix of devices attached to local or remote workstation controllers has been added to the controllers have been added to be added to the controllers have been added to be ad ork configuration flow-chart op

License fees for PathFinder Re 7.0 cost \$5.500

ASA International Ltd. and Ora

Corp. have announced that ASA's di-collection system, SmartTime, is be leased for the Oracle database to am, Mass., SmartTime

e and attendance record ies such as work-in-pre tivities such as work-in-process tre-ing, labor reporting, inventory mo-ment and quality control.

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Melding Unix, Windows worlds

Users consider options for migrating applications dows and on other sperating systems. Some occuprate information systems.

By Melinda-Carol Ballon

orate sites with mixed environ ments are finding that Windows emulators may just not cut it for migrating key applications over to Unix and other operating systems

To make the move, some of those sites are looking at two main vendors for tools that support Microsoft Corp.'s Windows Microsoft Poundation Classes (MFC): Bristol Technology, Inc. in Ridgefield, Conn., and Maincoft Corp. in Mountain

While emulators such as Sun Mic systems, Inc.'s Wabi can be used for low end applications, according to industry analysts, software demanding more ro-bust performance requires tools such as se from Bristol and Mainsoft.

"Many ISVs and corporate IS people can write for Windows and successfully use emulators like Wabi, but those emulators can also be slow and problematic," said Scott Winkler, a director at Gartner Group, Inc., a consulting firm in Stam-ford, Conn. "Bristol and Mainsoft offer a for an application and have it live in Win

One group of developers at Electronic Data Systems Corp., who created an drive analysis program for modeling ele systems for General Motors Corp. vehicle systems for General Mocors corp. in Troy, Mich., is evaluating the tools, according to Stuart Sinck, an engineer at the site. An analysis group there is running compute-intensive software on Units workstations but wanted access to the original PC application. Stack eaid.

We want to have data exchange so that the models we create on the PC will run on Unix and will be exactly the same across groups," be said.

cost of retraining or bringing in Unix

We're primarily a Windows shop, and we didn't have to hire Unix programmers — the tools enable us to have applications with a single set of source code run-ning under Windows and Unix," said Lin-Jojo, program manager at General ectric Co. in Schenectady, N.Y., who ed Bristol's Wind/U tools to move a eduling database from Windows to

Hewlett-Packard Co.'s HP/UX.

Mainsoft began shipping its MainWin
software developer's kit last month; Bristol began shipping the latest version of

is running on Links wer

ns wmn/J software earner this fail. Both plan to affer support for WinSEs early in 1994 to enable developers in move their code to Microsoft's Windows NT. Developers can use these tools with applications constant with a professional

ications created with a variety of C applications of the control of the c

meanson a stainwin software develo-er's kit is priced at \$5,000 for the fir-copy and \$2,000 for additional copie Runtime copies for Unix workstation are priced at \$195. tol's Wind/U 32s is priced at

ScreenCam gives voice to applications

As part of a bid to reduce end-to sing costs, Lotus Development Corp. has moved into the applicathat allows developers to incorpowalking users through an applica-

Called ScreenCam, the mult dia tool allows an application de-veloper to espture sound, applica-tion screen activity and cursor wement in a single integrated

Within an application, develop-ers can use ScreenCam to add on-line voice tutorials that highlight how a specific feature in the appli

"ScreenCam is going to be great. We can now add the same type of help utilities plus voice that are in use it with every application we tor of information technology at

While ScreenCam incorpo

dio, the tool does not sup video. According to Steve Barlow, product manager for Lotus' multidia products, video has been wing down the adoption of mul-edia products because they re-

ources to create relatively andio only, Barlow said applica-tion developers will be able to de tion developers will be able to de-ploy it on applications on any \$5556-class system that supports a sound card. ScreenCam itself re-quires only 1M byte of memory. In fact, Compaq Computer Corp., Imme and DSP Solutions plan to bundle ScreenCam with fu-ture norduces. Barlow said.

ture products, Barlow said. In addition, Lotus plans to add ScreenCam to its applications in 1994, including a version of 1-2-3

unced at Com-

ScreenCam will ship later this

Pact excites Smalltalk users By Jeen S. Bozman

Object Design, Inc.'s collaboration with Parc-Place Systems, Inc. will case users' worries about where to store their Smalliak objects, users and analysts said in the wake of the com-panies' recent joint announcement. The collaboration will provide a Smallialia-compatible object database for those who store their objects in relational databases or who are vendor-specific links to object data-who are vendor-specific links to object data-

have started to integrate Burling-ton, Mass-based Object Design's bjectStore object-oriented data-ase with ParcPlace's Smalltall

Object Design also plans to submit the inter-face to the Object Database Management Group as a standard link to all object databas-es, said Gene Bonte, Object Design's vice presistions easier to manage.

vider steps up to support all the f manager at DHL Airways, Inc. in Re Calif. "We try to limit the number have to deal with for problem determ DHL uses a Sybase, Inc. relational de store Smalltalk objects created in Pe

n object assembly eron Software, a small ve

eron Software, a small vendor of ob-t-criented tools, said it will mesh its achroWorks visual tools with Sunft, Inc.'s Project DOE (Distributed Obts Everywhere) environment. The vi-al tools reportedly will help Sun users commercial sites assemble code from jects. SynchroWorks for Solaris 2.x will ship with SunSoft's Project DOE de-veloper's release by year's end, SunSoft

Software engineering

Rational in Santa Clara, Calif., has created a Commercial Operations Group at will provide software engineering

HP port to Stratus

pwiett-Packard Co. said it will port its SoftBench Framework application de-velopment technology to Stratus Com ter. Inc.'s Unix-based fault-toleran

rland licenses O+E

oriand International, Inc. has il-mand O+E Software's database access technology, Q+E Extend, for use with future Borland products. Borland previously used Q+E Extend with its Quattro Pro for Windows spreadsheet

LaserData, Progress pair LaserData, Inc. in Tyngsboro, Mass., and Progress Software Corp. in Bedford, Mass., announced an agreement to

Smalltalk

CONTINUED FROM PAGE 75

Some Smalltak users avoid the map-ping problem altogether. The Snobomish County Public Utility District in Everett, Wash, uses Smalltalk objects to trigger Digital Equipment Corp. Rdb relational database updates on a Digital VAX

"Objects on the deaktop invoke a meth-od or transaction" on the VAX, explained Craig Gowdey, manager of systems de-

od involves "flattening" the objects to wedge them into the confines of a tablebased geometry. "The standard answer from object database companies is that it's like disassembling your car to put it in the garage and having to build it up be-fore you drive it away," said Adrian Bowles, director at Atelier Research in

Westport, Conn.
Object DBMS storage is more compati-ble with Smalltalk objects but depends on proprietary links. The ODI/ParcPlace interface could simplify that translation task. "The logical model for the database ses more or less directly with the object model in the application," said Steve McClure, manager of object tech-nologies program at international Data Corp. in Framingham, Mass.

agement applications. LaserDate d the Progress Open Access Program, which provides development sup port and joint marketing for companies that interface their software products with the Progress application development environment. In a separate announcement, Progress said it has joine

IBM's Market Development Program, under which IBM and Progress will con-

duct joint marketing activities to pro-

mote the Progress Application Develop-ment Environment to IBM RS/9000 users

ICS ships Builder Xcessory Integrated Computer Solutions, Inc. Cambridge, Mass., is shipping Builder

Xeessory Version 3.0, a major release of its graphical user interface (GUI) builder for Open Software Foundation Motifenvironments. The new version integrate C++ object-oriented programming with Motif development and provides Motif 1.2 and international support. The said Sun Microsystems, Inc. sub SunExpress will distribute the versi

Company offers video course

Human Pactors International, Inc. in Pairfield, Iowa, is offering a video train-ing course, "How to Design Usable GUIs for Corporate Applications." It costs \$895 for two videos and four reference

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an application programming interface (API)-level product designed for porting estions from OpenLook to M According to the San Matco, Calif.,

company, XvM is a library for graphical user interface applications that sup-

pliant applications.
The product can be used as a replace-ment for existing XView applications when converting to a Motif look and feel. XVM costs \$465 per single-user binary and \$5,000 for source per building.

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rmetrics, Inc. has introduced a software development tool kit for IBM's

According to the Wynne e product is a graphical user elopment tool that does not rec

one or through Dynamic Data Ex-ige and Dynamic Link Library hanisms. User-defined information d navigated, providi

MetaSolv Software, Inc. has intro PowerFrame, a reusable class in for Powersoft Corp.'s PowerBuilder

product provides an application architecture or technical framework which users can build any type of ci

ture designed as a suite of inh window classes; a comprehensiv server security system that can be u to prevent unauthorized access to a cations; a sample application that d onstrates the use of the application Frame features.

Each compon and extended to meet requirem because PowerFrame is delivered in a class library format.

A single-developer copy of Pow

Frame costs \$695. MetaSolv Software

pplied Logic Program ounced VIA/Visual informant for Windows.

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According to the Dallas or

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Management

EBC industries' Harry Brown: "If you can't abide by the rules, then you should leave."

into his carefully wrought network of suppliers work — an informal team of comp and, yes, competitors wasn't playing fair; it was going after projects on its own instead of with

"I said, If you can't abide by the rules, then tries, Inc. (Brown is its president) you should leave. They agreed and walked and all of its 11 allied suppliers

Big mistake on its part.

arry Brown was not amused. Word had gotten back to him that one of the companies invited cause it didn't have the clout of Brown's network - an informal team of compa-

same small-parts business. In contrast, Brown's EBC Indus-

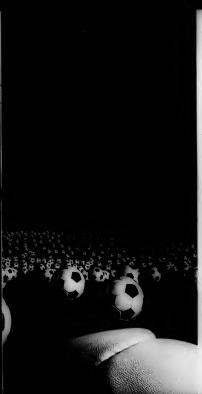
and competitors have been grow-



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Committee Management for

Networking

CONTINUED FROM PAGE 81

inerat 12% to 15% every year since he co bled together the network in 1988 EBC has grown from 68 employees to its cur-rent 93 and from less than \$4 million in sales to \$8.4 million expected by year's

That incident highlights the gloriand potential pitfails in the growing trend of "co-opetition."

Not familiar with the term? Get used to THE STEPS TO SUCCESSFUL

CAREFULLY DEFIRE THE PURPOSE.

MARLY FOCUS OF STREET, LOUISING MIC STREET, STREET,

tools to more confidently buy and sell bonds. Sure, Bloomberg Financial Services, a financial news service, provided some information. But only some London's Renters Holdings PLC, one of

the largest market data companies in the world, approached New York-based Goldman, Sachs & Co.'s senior bond trad ers with a deal. Help us start a service to compete against Bloomberg. The busi ness side called in James K. Burns, then Goldman, Sachs' chief information offi-

cer, to evaluate the prospect. The idea looked great. So great, in fact, that Burns, along with Sal-

omon Brothers Inc 's Mark Sternberg, with whom he discussed the project, decided to eliminate the mid-We both agreed: Why

share this with Reoters? said Burns, now president and CIO of SHL Systembouse, Inc., a systems inteeration and outsourcing organization based in Conand New York, "But we also said whatever we would do would start off behind Bloomberg, so we

needed more partners." Eventually, Goldman and Salomon recruited CitiBank NA in New York, The First Boston Corp. in New York, Morgan Stanley & Co. in New York and Lab

man Brothers, Inc. in New Haven, Conn. Each partner would doonte data and fiware that the resulting service company - EJV Partners - would turn into

a data and analytics system power! certain to lure business away from Only it hasn't turned out that way Ev-

ery partner had a different idea of how to iver the information; with a cutting edge system that would take time to build or with a "reasonable" package that it could sell almost immediately. Cuttingedge won, and Bloomberg continued to gain ground with more cur But the problems ran deeper. While EJV Partners won't confirm or deny it, word throughout the halls of Wall Street holds that the six partners continually bickered over what facts, analytics and software they would give to the venture.

olding out the best information for Whatever the reason, the initial bo rading system sucked eggs

When we evaluated EJV's system, it came clear that the marginal benefit over Bloomberg just wasn't worth the cost," says Tony Coffey, portfolio manager at Franklin Resources, Inc. in San Ma teo, Celif.

in more than a year and a half, not one customer hought the system. Zip. EJV Partners' employment fell from 180 to its current 110. The firm's chief executive of heer also felt the ax and was replaced last summer by Thomas Wendel. However, EJV Partners released a new, more capable system last summer that is finally

market bungered for data and analytical We've gone from [having] no paying customers to between t5 and 20 in the nest four mooths," says Dick MacWilli ares FJV Partners' bead of sales and marketing. Six of those paying custom ers are EJV Partners' original partners.

What went wrong? Agreeing to agree

It's always difficult getting competitors to agree oo common goals, common str dards and common methodologies, MacWilliams says. "And when you have partners contribute more than just me ex decision-making becomes even more

complex. EJV Partners management operated like the multibeaded Hydra, each with its own idea of how things should work.
That, maintains Jessien Lipnack, co-

author of The TeamNet Factor, can be a common source of failure. Lipnack, who actively promotes the idea of co-opetitioo, says participants must define with hard-edged clarity the purpose of their project. "That purpose is the glue hold ing the teamnet together," Lipunck says.

Without it, the project will fail Her point transcends mere platitude After all, a traditional biscarchy contains rules, regulations and policies that people can follow: "But in a [teamnet] network, all you have is the share agreement of what needs to be done.

Perhaps one way to ensure clarity of purpose is with a disinterested arbitra tor. That's one role Electronic Data Systems Corp. is playing as it helps four Cal-ifornia managed-care plans develop the California Health Information Network (CHIN).

cal groups. For the competitors - Pru Care. HealthNet. TakeCare and Blue

Cross/Bine Shield of California - the

challenge is to discover what they have

in common without revealing propri-

"I constantly have to weigh in the back of my mind what is competitive informstion," says Joseph Sinsangkeo, manager of information systems technology at HealthNet in Woodland Hills, Calif. That's where EDS and (Health Information Technologies] play a role - as keep ers of company-specific information. And a lot of times they'll come back and say. You all have a lot more in common than you realized. Are you willing to

And while EDS' role as information broker is important, so is the relationship among the four partners. Every week. IS representatives from the four. along with representatives from EDS and Health Information Technologies, hold conference calls to work out imple-

Every month, ClOs and top busin executives meet to bash out larger issues, such as choosing where the January pilot will roll out. Each men ber bee an equal voice, which it exercises loudly and clearly. It's as if the project leaders had read Lipnack's book, with its admonition to meet regularly, push information both up and down the hierarchy and create more leaders (and fewer bos broughout the team.

It is also wise to limit the number of partners in the group at the outset and let the eship increase as it learns to work together.

For example, when CHIN finally goes on-line, partners will pay per transac-tion And since volume will lead to volume discounts, participants hope to re-cruit as many competitors, IPAs and





That, however, will be much later. For loitially, Dallas-based EDS and its partner Health Information Technolnow, the aim is to keep the process runories in Princeton, N.J., were setting op or which means limiting the players to an EDt system to transmit uniformly for matted claims/encounters, eligibility in-formation and referral authorizations "I think the difficulty of reaching agreement increases exponentially as you add people," says Linda Hatchinson, among health care plans, indeper physicians associations (IPA) and medi senior systems consultant at PruCare.

"But the nature of the project is that by
having four of us cooperating, we will ac-

dish more than any one company is kind of openness and lack of for

aries to engage in mutually beneficial projects. But co-opetition, management pundits say, goes even further to include the notion of competitors working tother toward a shared goal while con For example, EBC gladly shares its

as the phrase 'virtual corporation

Both embrace the concept of compa-nies reaching across corporate bound

electronic data interchange (EDI) exper-tise and inventory database with team mbers working on the same job. It uid any member step on anoth one's territory, the members politely but firmly tell the violator to ston.

Not everyone has bad Brown's succ

Others have ventured into collaborative waters only to find themselves mired in a strust, churning through inment dollars without earning a sin-

Take Electronic Joint Venture (EJV) Partners. Like the Erie network, New York-based EJV Partners embodied the shared vision of competitors. But rather than laid-back, small-parts manufacturers from the green valleys of Pennsylva-nia and Ohlo, these companies were six of Wall Street's leading bond-trading

Their goal was enormous profit. The esuit so far has been an industry joke.

Three years ago, the bond-trading

BY LESLIE GOFF

hen G. Patrick Galvin had to make a decision about which checkronic data interchange (EDI) organizations be abouted join on behalf of his company, he considered four factors how to checate his staff, how involved his group needed to be in standards acting, which groups could bedy him find potential basiness partners and how much money he was willing to spend on member-ship he was willing to spend on member-ship.

As vice president of information services at the Lincolnshire, ill-based Prescription Services division of Caremark International, be had to jump into the EDI

fray quickly.

Galvin had boen involved with EDI orgualizations while at Federal Express
Corp. before be joined Carenark, but his
new company, which he joined in September 1982, had only minimal electronic
funds transfer applications in place.
Caremark in a provider of alternative
health ours services such as mail-order
histories. In home theremy and orthohistories.

pedicore.

"EDI is the means to improving a comnay's profitability." Galvin says. "I saw many apportunities for us to miplement trading partner relationships with drug amanufacturers and our customers."

Deciphering the alphabet soup of EIM organizations across the U.S. can be as difficult as implementing EDI, however. Some 28 settle local and regional

DI Need to Jump-start your EDI offorts? Regional, industrywide EDI groups and standards bodies offer support. DEA FACTORIES

cross-industry user groups provide networking opportunities and educational focums. The groups are like "idea factories" that help "jump-start the imaginations of their members," says Dos Waltzer, director of information systems

nations of their memoers, says uses walter, director of information systems at Spectrum Office Products in Rochester, NY, and founding chairman of the Rochester EDI Users Group. The Exectronic Data Interchange As-

The Electronic Data interchange Association, a national EDI implementation and standards, trains EDI users, monitors legislative and regulatory activity, forms task forces among members and works with the standards bodies. Industry-specific groups develop and

promote standards within their respective industry segments and represent members before the American National Standards Conference ANSI X12 — the domestic interindustry standards body — and the Pun American Edifact Board (PAEB) — the regional representative of the global UN/Edifact standards body. Both X12 and the PAEB accept corporate numberships and are overseen by the Data listerchange Standards Association, Inc., which also disseminates EDI information, including an annual listing of EDI publications, industry guidelines, local user groups and industry-specific

Tapping resources
For staff training, Galvin tapped the eduestional resources of the Electronic Data

extional renources of the Electronic Data interchange. Association, of which he had been a member since his Feder days. (He now serves on the board of directors.) Next be encouraged his applications developers to join the Grenter Chicago EDI Forum as a means of searing from colleagues and staying shreast of

"Loral user groups make for great networking opportanities," be says, "They can really belp when you're just starting out and gathering the initial information

Most of these groups were started by EDI implementors who wanted to forge bonds with colleagues in their area to share idoas and war stories, such as Mlanta's EDI Business Forum, initiated by three colleagues over a business lanch

Free years ago.
"They offer technological and contional support," Waltzer says. "Typically, companies get into EDI because: they have to, and than a language all its own. So in user groups you find a sympathetic shoulder."

Shouser. Their missions and memberships differ from city to city, however, says Gny Sitesinger, U.S. EDI marketing manager at Digital Equipment Corp. and founder and leader of the EDI Forus of New York

City.

She suggrests that before joining, prospective members should ask a few basic ques tions regarding the mix of particlpants: whether the group is oriented toward technical implessentation, business issues or socializing with powers, vendor affiliations: and few.

vendor affiliations; and fees.

Fees also vary, ranging from voluntary
participation to less than \$100 per year
for individual memberships to several
bundred deliars for annual corporate

bundred deliars for annual corporate memberships, Slesingers ays: Industry-specific groups are less sympathetic and more political, working to develop industry-wide standards and

omote consistent industrywide EDI plementation. The benefit to a company of belonging EDI, page 83

NATIONAL CROSS-INDUSTRY EDI ORGANIZATIONS The following organizations are national in scope and serve all industry segments in the development, maintenance and personation of EDI standards or in the education of the development of the consolidation of EDI standards or in the education of the standards or the standards of EDI standards or security.

GROUP & CONTACT

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Committee (ASC) X12

NSI Accredited Standards operations (ASC) X12 Standards operations (ASC) X12 Standards of Standa

Data Interchange Standards Association, Inc. (DISA) 1500 Diagonal Rd., Sulte #355 Alexandria, Vs. 22314-2935 Barriett Rusk, 1105 president,

Electronic Daia Interchange Association (EIIA) 225 Robelsers Lane, Suite #550 Alexandria, Va. 22314 Hoten Cook, manager of member

Pan American Edificot Board (PAEB) ole DEGA (see adaress above) Carrie Sponcer, administrator, (708) bill-7008

UN/Seliest UN/SCE Trade Division Paints de Nations CR-1211 Geneva 10, Switzerland Address correspondence to Haze Hannell, 41-42-017-0467 Develope, materialno and promotes aternational EDS standards; confidence activities of international regional representative bodies, such as PADS (see above), with regard to 211 standards assemble mater LOCAL AND REGIONAL EDI USER GROUPS

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WHY THE NEW WYSE X-TERMINAL

nly five X-Terminals meet the most stringent demands imposed by Wyse. Choose anything less and you just might end up with a bunch of ex-terminals.

without sacrificing productivity.

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WX-17M 17" memochrome X-Xirosinal 1200X 1004 resoluti

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INTRODUCING A LARGE FAMILY IN THE NEW X-GENERATION—THREE COLOR, TWO MONOCHROME.

Wyse brings to the X-Terminal world a wide array of color and monochrome displays, ranging from 15- to 19-inch screens. They feature 256 colors and high resolution for sharp, clear images.

Furthermore, Wyse X-products are upgradable and flexible. They offer dual PCMCIA (PC-CARD) interfaces. And they're ready to accept add-on devices such as Flash Memory cards and DRAM, with future expansion for wireless LAN and modem adaptors.

100,000 XSTONES AT ROCK-BOTTOM PRICING.

Ideally, you should be able to add seats in a workstation environment at a reasonable cost, and other standard UNIX platforms is assured.

Fast text and graphics operations are provided by
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The powerful MIPS R3000A RISC-based architecture makes a move to the new WX series of terminals—a Wyse move indeed. The fully optimized server lets you take complete advantage of the high performance processor for X-specific applications.

S WON'T BECOME EX-TERMINALS.

And the easy-to-use software allows you to access all your local clients with a simple keystroke.

FIVE MILLION MORE REASONS W SHOULD COME BEFORE X.

Sure, we could list a few dozen other features here. Like local client support with window managers (Motif." Open Look"), or networking with TCP/IP, DECnet, LAT, and other protocols. But the key fact is that five million Wyse terminals already function

reliably in the business world. Which makes it a sure bet that the new WX line will be hard at work long after others have become X-tinct. Call 1-800-GET-WYSE for details on the new family of X-Terminals from Wyse.

WYŞE

The second secon

Networking

CONTINUED PROM PAGE 84

mality among members is what's so intriguing about a network of erstwhile en emies, save Brown at EMC, "We all just call, ask to come over and discuss the

Taking the team approach interested in a particular job? Just tell the other players; they might want to vie for it, too. Want a new computer-numeric control program for your milling ma ine? No problem: EBC's programming staff will send one over

The team approach has helped each member reach independent goals in ways otherwise not possible, in Brown's ease, his goal was hig, tucrative contracts that were beyond his reach. Brown, quite simply, needed help. When he first took over what was then called Eric Bott Corp., the manufacturer

of parts for the transportation and defense industries was losing \$100,000 a Worse much of the shop floor equ ment had been cannibalized to keep or er machines operating. Then an order came in that EBC couldn't fill. "So I went to my competitors, ex-

ained my dilemma and proposed that

we go after contracts together," he says.

tors, Joseph Dyson & Son in Painesville, Ohio, saw this as the opportunity to expand. It was the beginning of a beautiful relationship - one that eventually grew to include up to 12 soppliers and compet itors that team up against much larger forces hidding on the same contract. We still compete. But we cooperate on

areas where individually we couldn't do it alone, either because of equipment or capacity reasons," Brown explains. succeed and one that is obviously not be

ing lost on the CHIN group. Chances are,

the four players in the CHIN group will

As it happened, one of those competi-

That's the ticket That attitude is just the ticket needed to

succeed. Somehow, whether throug common sense or just plain luck, they've established a way of interacting that prootes trust, open communication and a constant eye on the project's objective. Those ingredients - crucial for any titive venture - are damnably dif

ficult to instill among allied competitors Just ask EJV Partners' members So before you enter the ob-so-bran world of collaboration, ask your gut if you and your potential partners can work together. If the answer's yes, pre-

pare to work long and hard. If it's no. back out. Garner is a free-lance writer in San Carlos,

Homda/Lunda Emerging Technologies Expo "54 Oriendo, File., Jan. 20-22 — Conset: Nomda

Deme 'ea. Palm Springs, Calif., Jan. 23-26 -Contact: InfoWorld Editorial Events, San Mateu, Calif. (415) 312-(645.

Net 'pe, Washington, Jan. 24-27 — Contact

World Expo Corp., Fransingham. Mass. (508)

orth Annual "Achieving Quality Soft

Totorisi and Conference, San Diego, Jan. 25-28 -

Speakers will be Barry Boehm, University of Southern California; and Ron Radice, director

of the Software Process Program, Contact: Vince Heald, Reck-Ellman Agency La Mess.

Information Systems: Product Data Management & Alternatives, Dallas, Jun. 26-25 -- Contact:

brence. Temps, Fis., Jan. S1-Feb. 4 -- Contact group of Educational Technology Florida Edu

Executive Technology Summit '90. Sponsored by The Society for Information Management and

Computerworld, Turpon Springs, Flu., Feb. 2-4

Contact: ATI Travel Management, Chicago,

ion Center Tullahousee, Fla. (901) 459-0950.

meet Roundtable Hoston, Mass. (617)

879-6700

Calif (\$19) 469-3500

JAN. 30-FEB. 5

Lands, Kanson City, Mo. (\$16) 941-3100.



DEC. 12-DEC. 18

ont: Policies for Re Government and the Workplace and for Improving Communications with Citizens," Workington, Dec. 12-14 - Sponsored by the State Inform tion Policy Consortium. Contact: National Association of State information Resources Execu

tivre, Lexington, Ky. (606) 231-1905. Lap and Paintop Exposition and Confe ropto, Dec. 13-14 - Contact: Laptop Exposi tions, New York, N.Y. (212) 682-7968.

tive. Poston. Dec. 14-16 — A seminar providing an introduction to the concepts and obof re-engineering with an analysis of the buni orea factors driving it Instructor will be Michael Hammer, The Center for Re-engineering Lead-cribip in Cumbridge, Mass. Contact: Hammer and Co., Cambridge, Mass. (617) 354-5555.

IAN. 2-IAN. 9

Third Annual ShowSiz Expe. New York, Jun. 6-8 Contact ShowBix Expo, Los Angeles, Calif.

1994, International Winter Consumer Electroni Show, Las Veras, Jain, 6-9 — Contact Electron Industries Association Washington D.C. (202) 452,6796

IAN SHAN 15

ObjectWorld, Scotton, Jan. 10-13 - Contact World Expo Corp., Framingham, Mass. (506)

IAN. 16-JAN. 22

one Council a national errors Client/Server Conference & Exposition, San Jose, Calif., Jun. 18-21 — Contact: CMP Conference & that develops and promotes EDI stan-Exhibit Group Manhannet, N.Y. (316) 362-7460. Re-engineering: The Implementation Perspec-tive Hoston Jan 19-21 — Contact: Hansen and

Co., Cambridge, Mann. (617) 354-5555. Storage & Interfaces 'pa International Techn ogy Conference. Santa Clara, Calif., Jan. 19-27-Nine separate but related forums and sentence will be offered during these dates Conset. Technology Forums, St. Peter. Minn.

III. (312) 614-6612. FEB. 6-FEB. 12

oliding Enterprise Architectures. Washingt Feb. 8-10 - Contact: Technology Transfer Institute, Sonta Montes, Cabif. (310) 394-8305.

FEB. 13-FEB. 19

Sigds: Workshop on Field Programming Gats Arrays. Berkeley, Calif., Feb. 14-15 - Contact: ristion for Computing Machinery, New York N.Y (212) 044-1318.



to an industry-specific group is influen-

CONTINUED FROM PAGE 85

the industry itself. Corporate membership in these

EDI idea factors: industry groups

dards in the bealth care industry. with X12 and PAEB without having to join 'Our need right now is to develop retathose organizations, and in setting stantionships with drug manofacturers and NCPDP helps us set those up," Galvin "There's a lot of standards setting go-

groups costs thousands of dollars per ing on in that group, and now it's inteyear. Galvin's cost-consciousness has grating what it has developed into the led him to choose the National Council for X12 arena

Prescription Drug Programs (NCPDP) over the Health Industry Business Com-Goff tea free-tance writer in New York

COMPUTERWORLD NOVEMBER 29, 1993

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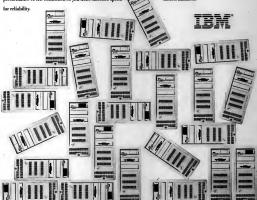
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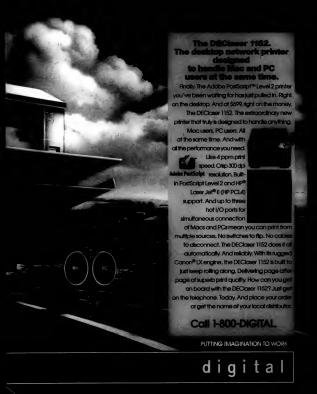
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The CW Guide to Mainframes

MAXIMIZE

Buy a new mainframe? Probably not. Squeeze what you've got for all it's worth? Very likely.



Tools for automation, performance and optimization are selling madly, as users find no letup in

ot only is the mainimme not dead yet—

"is humming quite loudly.

Bad-news downsting stories. Lower hardware prices.

And a realization of how these processing powerhorses can fit into a
distributed compositing plan. All of
these factors have led to something
couldn't ask for a better transaction
processor, large database engine or
susce file serger.

super file server.
But "you can pretty much bet that
the first answer is going to be 'No'
when you go to the CEO and ask for
more money for more mainframes,"
says Faul Mason, manager of system
level software at International Data
Corp. "It's going to be, 'Can't you get
more out of what we have?"

One popular means of maximizing mainframes is performance monitors (see story page 104). These pinpoint bottlenecks and help with load balancing.

The trouble with these types of tools is that "each vendor has its little niche," says Lane Bradley, system vice president of information technology at Gainsco, Inc., an insurance company in Fort Worth, Texas.

"Data center managers would have to purchase products from hundreds of little vendors to find a unified solution," Lane says.

There's been more innovation in data center automation (see story

At some point, however, you have to increase capacity, whether through npgrades or by off-loading to other mainframes or other platforms altogether. IBM just previewed its "transaction server," which is supposed to take on work from CICS or IMS applications to free up mainframe MIPS for other tasks. (For other recent announcements see page 101.)

nouncements, see page 101.7
Even 1BM recognizes that large
systems will not always come in today's form factor. Many traditional—
and nontraditional—mainframe
vendors are looking to offer even lower-priced systems that are smaller
and more conductive to today's open
environments (see story page 101).

inside

Buyers' Scorecard: Landmark Systems Corp. tallies highest overall satisfaction score among leading MVS performance

Fixing Line: Evaluators of the Unisys 2200/500 Said the system meets mainframe performance levels and substantially reduces environmental costs. Page 109

VENDORS OF DATA CENTER TOOLS STRIVE TO KEEP PACE WITH DISTRIBUTED REQUIREMENTS

By Michelle Lources



stylish thing to talk about today, but they soon may be. Data center workloads continue to rise, especially ies turn to centralized control

of their distributed systems. What's more, vendors of automated tools have been hard at work keeping up with the challenges of distributed environments. The most interesting of these advances are applications that communicate with one another and across plat-

forms, consoles that offer a view of the distributed environment and LAN hackwa

integrated application When automation vendors such as Boo & Babbage, Inc., Legent Corp., Candi Corn. Computer Associates International al. Inc. and Altai Software, Inc. first berun to sell tools that automated me frame chores, they affered a variety of discrete applications, such as console automation, performance monitoring. report distribution, job scheduling, automatic restarting of programs and problem tracking.

Recently, however, users begun demanding that these applications work together. For example, if the scheduling

failed, it would alert the restart recovery package, which would then try to correct the fault. If the restart recovery software couldn't get the job running, it would elect on operator and/or open up a problem ticket

This type of integration can dramatically improve efficiency. 'An organization could easily see a 30% increase in productivity through integration," says Ross Markley, a systems engineer at Nor-

apolis. At a previous position, Markley was working with an in-

beartache and poor Markley

Integration efforts. however, are at an immature stage. "A lot of these products were developed as singlepoint packages hrought

services.

west Technical Services, Inc., the pro- Greenville, S.C. cessing arm of Norwest Bank in Minne-

house integrated suite of applications from Service levels would also increase. "Operator mistakes are the higgest cause of downtime, lost resetrees.

together

program was running a batch job that through acquisition," says Igor Stenmark, program director for software management strategies at Gartner Group, Inc. in Stamford, Conn. 'They were not designed using the same datahave and the same code. The degree of integration is shallow."

"With many of these programs, the interface for each function looks the same. but that's about it," says Phil Arsenault. a systems consultant at Metropolitan Life Information Systems Center in

The most you can hope for with the traditional vendors is for one or two applications to be strongdata center ly integrated. Altai, Boole & Babbage, Le-

> all offer good integration among several applications. such as 4th Dimen-76% sion Software, Inc. are entering the market, hoping to fill that void. "This company was fartunate

enough to enter the market just recently and developed all of its products in one monolithic effort." Stenmark says. The Irvine, Calif., cor ny, which introduced products in 1987, offers the best integration with the greatest range of categories, Stenmark says.

Of course, single-vendor solutions preclude you from purchasing the best of the breed. And the quality difference among the various applications is 'like the difference between a Rolls Royce and a Ford Escort," Arsenault says, "Some batchscheduling packages, for example, don't contain documentation in the product itself and can't take prerequisites into se-

Cross-platform suites

count.

it's not enough, these days, far your applications to work well together. The average corporation has six hardware platforms, says Yossie Hollander. great, CA and Candle chief executive officer and chairman of 4th Dimension Software. There is a need, therefore, for the integrated applica-Newer vendors tions to work across the distributed environment.

"Withenterprisewide automation, you can monitor an entire application instead of just the components," says James Spangler, manager of data center automation at United Parcel Service, Inc. in Mahwah, N.J. "Right now, we monitor specific pieces of hardware. If the AS/400 goes down, we don't necessarily know its affect on our package-tracking system and what other pieces of equipment will

integrated automation products

| COMPANY | COMSOLE | PERFORMANCE MANAGEMENT | STORAGE MANAGEMENT | REPORT | SOMEDIALING | AUTOMATIC RESTART AND RECOVERY | PROBLEM | BATA BALANCING | SYSTEMS COVERED |
|--|---------|---------------------------|-----------------------|--------|-------------|--------------------------------------|---------|-------------------|--|
| Altai Sollman, Inc. Arlington, Toxon (Discon) | • | 16 | • | • | • | • | | • | MVS, VSE VM |
| Sussymbe, Call. (Empact and Hairriew) | | • | • | | | • | 577 | | NIVS, IMS, CICE, DB2 |
| Candle Corp., Sents Monica, Calif. (Designation) | • | | • | 4-6 | | | | MA. | MVS. VIA. CKS. DB2, IMS, VTAM |
| Computer Associates International Inc., Islandia, M.Y. (CANhicanter) | 30 | • | | NA | 100 | • | | • | MYS. CICIL, M DR2, ISS2, IES MYS ESA |
| ath Dissension Software, inc., tribes, Callf. Designated Operations Architectural | • | 22 | • | - | • | | | 40.14 | MVS, Fujiriyu MSP |
| Lagard Corp. | - | • | -1014 | • | 10 | • | | | NAME OF |

WA. NOT AVAILABLE VES A

The CW Guide to Mainframes

CROSS-PLATFORM SUITES
The following is a list of vendars now developing applications that communicate with each other and across different pitalisms.

- COMPUTER ASSOCIATES, ISLANDIA, N.Y. (CA UNICENTER/STAR)
- CO-OHECATERSTARY
 COMERCIA THE INTEGRATE PRODUCT FOR HIPADX
 9500 and MVS. Future: Sequent, RS/6000
 Sun, MP 9700, Data General Arion in beta
 test. NetWare, RT planned, Exercise
 GENERAL AVAILABILITY: Third-quarter 1994.
- ATTO DIMENSION SOFTWARE, INVINE,
 CAUM, (ENTERPHISE CONTROL
 ARCHITECTURE)
 COMPRETE SCHOOLING TO SUIT OF THE STREET
 ASSACRA, WAX VMS. SUIT, RSSIGGO, FUTURE:
 HOPAL (First Suniter 1994), Security and
 report distribution expected in 1994.
 Exercise capacity and accompany of the suit of t EXPECTED GENERAL AVAILABILITY: 1996.
- LEGENT, HERRIDON, VA.
 CURRENT: Underlying technology
 assembled for MVS. Unit. AS(400, OS/2,
 MerWare, NT, HP/LEC, Sun, VAX VMS. EXPECTED GENERAL AVAILABILITY: Applications to be introduced throughout



CONSOLE AUTOMATION pliowing is a list of som OLE & BASBAGE, SAN JOSE, CALIF.

- TONE SOFT AMANEIM, CALIE.
- . MAXIM SYSTEMS CORP., VIERRA, VA. VOTEK SYSTEMS LTD., TORONTO, CARADA

CENTRALIZED BACKUP
The following is a list of products that provin
mainframe backup and recovery for LANS.
These packages have components that work
on the mainframe and the PC.

- IBM Adstar Distributed Storage Mana
- · HEW ERA SYSTEMS SERVICES LTD., · ENTERPRISE DATA, INC., PARSIPPANY, N.J.
- · NETWORK SYSTEMS CORP., MIRITEAPOLIS
- STORAGE TEX, LOUISVILLE, COLO. Near Net Storage Manager
 - ERLING SOFTWARE STORAG HOVA, CALIF. S. Fanest, SAMS: Control

the ten tent the test man and

AUTOMATED TAPE LIBRARIES
The following is to list of some robotics vendors.

- IBM IBM 3495
- BOSCH STORAGE SYSTEMS, BOSCH STORAGE SYSTEMS 8800 AUTOMATED TAPE LIBRARY
- EXABITE CORP., BOULDER, COLD. EXB PRODUCT LINES

MEMOREX TELEX CORP., DALLAS

eventually be affected. By seeing everything tied together, we will be able to better understand the impact of a problem."
Enterprise automatine would also bring some sorely lacking mainframe

disciplines such as security, automatic backup and asset management to the ted environment. An array of generally available cote

prisewide products is expected by 1996, according to Stenmark, from the likes of CA Legent and 4th Dimension Software

For managers who can't wait to reap the benefits of enterprisewide aut many of the parts are here today. The ces won't buy you the same efficiency as a totally integrated product, but you can achieve some very dramatic improvements in head count and service

One important piece is coterprisewide console aotomatico, also known as outhoard contole automation. These are educts that consolidate console messages and performance information from virtually any type of electronic device, including communications and facilities management equipment.

Enterprise console automation tools save been around for the last five years, but they haven't been taken seriously us til recently, when people got concerned about distributed systems management.

Outboard coasole antomation tools are usually Unix-based systems that communicate with mainframe perforce monitors.

They provide an operator with a sing any provine an operator with a single view of the organization and in most cas-es can be programmed to start applica-tions, fix minor problems and alert the operator of an emergency through peech or a flashing message. Swiss Bank Corn. in New York has been

using Tone Software Corp.'s Compulert since 1990. "We have one console to mon-itor 40 different entities, including routers, multiplexers and our legacy equip meet," says Roger Best, a network/

systems integration specialist at the The cost of monitoring the bank's diste computers without autom would be about \$12 million a year, se-

ding to Best. Another piece of the enterprisewide management puzzle is automatic soft-ware distribution and asset manage-

meet packagen These programs provide a centralized way to install applications and transfer mainframe files to opdate workstations

One user says he can install a sin program with a couple hundred kilocytes of memory to 400 workstations in under an hour. A manual installation ould take three to four hours, he says, even if all the workstations were in the

same place and nobody was working at their machine. Centralized backup Mainframes are increasingly viewed as an ideal place to back up data on PCs and

"The World Trade Center disc taught as about the need for centralized up," says Robert G. Simko, concu tive director of the International Tech oology Group in Los Angeles. "Compa-nies with centralized backup were up and running in a week. For organization with databases distributed over differ ent floors and no centralized backup, it took over a month to get their computers running."

Lousoun is a free-lance writer based in Great March NV

tape libraries for small shops

e libraries for a nu ber of years. Now sys-tems are available for any size shop that wants to substitute ro botic arms for human ones to do mundane tasks like tane mosu

"I would say that a "I would say that a data center with 5 to 20 MIPS of processing could start using the ju-nior silos," says Joe Sin-detar, a consultant at

Frazer, Pa.

Corp. 's recently intro-duced 500-tape library even small data center automation. The list price for the Storage Tek tape library is

\$125,000, according company spokesperfrom t0 to 30 opera-tors," says Arnold F ber, president of Par-ber/LaChance, Inc., a consulting firm in R

won't be waiting for erators to load them. Amp, manager of mputer services at reat Western Bank,

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WE ASKED SEVERAL USERS TO RECOUNT HOW THEY MADE THE MOST OF THEIR MAINFRAMES

By Joe Panepinto

By serve to em rather than board fix. Here



w. GTE Services Corp Comiltus, N.Y.

Even though his boss billed him as a "star tuner" at GTE, Goodfellow wou rather be considered a "lunch-pail and hard-hat, get-the-job-done" kind of guy. He would rather fully exploit existing tuning methods than bring in exotic new

We haven't done any real whiz-bang. in-depth-type stuff, but we've seen plenty

of improvement." Goodfellow says OTE's data center in Syracuse, N.Y. operates as a zero-profit chargeback center that offers processing to all of GTE's units, including the world headquarters in Stamford, Conn. A simple op cration Goodfellow has used to save CPU roes has been to scan the job control language of incoming jobs and re allocate block sizes where appropriate.

Recently, OTE acquired a product alled Strobe from Programart Corp. in Cambridge, Mass. It will automate the ming process, making it easier to find cases where memory blocks are incently allocated.

oiting MVS System OTE is also expl-Managed Storage (SMS) by writing routines that automate the use of virtual I/O Virtual I/O saves time because data is written into the mainframe's memory rather than to a direct-access storage device (DASD). While individual jobs can write in the use of virtual I/O onto their job cards, Goodfellow has automated SMS' use so that all jobs writing less than

10 tracks of data can write it to system

memory rather than physical DASD. Before, everyone wanted to use virtual I/O, but it was eating up memory." Goodfellow says. "Now we've exploited the system so we could force job writing temporary files to use virtual I/O and also force a limit on the amount of memory

they could use

Like other mainframe shops, GTE is obviously concerned with the I/O bottleneek. It uses SyneSort from SyneSort, Inc., so that 75% of sorts are oo longer being done in job space but in hyperspace and so have oo oeed for 1/0 to physical DASD. Also, GTE took another tack to

beat the I/O bottleneck - it got a faster storage subsystem "We just brought to two of EMC Corp.'s Symmetrix 4832, 90G-byte disk arrays with mega caches and small platters.

Goodfellow save "Our sverage response time for DASD I/O went from 28 msec. denve to 4 mace

BlueCross BlueShield of Minnesota

Michael Bryant, senior systems spe-cialist, Bine Cross/Bine Shield of Minta Engan, Minn. When Bryant first started at Blue Cross, he realized there were more th

300 applications loaded on its two IBM mainframes (600J and 720), and nobody knew if anyone was using them. "That was a real bee in my bonoe t," he says. "I brought in SoftAudit [from Isogon Corp. in New York] and dropped tilized software that was costing

ns \$150,000 a year in maintenance and apdate costs." At the same time as Bryant was taking his first swipe at uoused software, Blue Cross was installing an Amdahl Corp

18%

9% 20% 5432.9 24%

mainframe. As a result, his discovery of the unused software saved the company the costs of replicating the licenses on the new machine.



ministrative systems, Pennsylvania State Universitv. State College

Like other main frame shops mov ing to client/server, Penn State is reptioning its IBM mainframes as a type of superserver by introducing distrib processors on the front and back ends. On the froot end, Penn State is rapid

placing 3270 dumb terminals with PCs (Unix. DOS and Macintosh machines); on the back end it has moved its Adabas relational database management systems (from Software AG of North America, Inc.) to RISC-based processors, which feed data to the IBM 3000 and ES/9000

"We realized we could save processing cycles on our mainframes by moving Adabas and all of its associators off the 3270 architecture and onto RISC boxes. which are a lot ebeaper and have much faster disk storage," Blythe says. "The way it works now is the mainframe gets calls to Adabas and passes them to the SC machines. The RISC machines do all the compute cycles for searching compressing and decompressing the data, then pass the data requested back to the mainframe, which completes the

"This takes those cycles off the main frame and extends the life of that main frame considerably," Blythe adds.

One solution Blythe has pury avoided involves large (generally mid-range or minicomputer) front-end data servers. Replicating data on such serv ers means updates are slower to reach the actual mainframe data table, whereas users want changes to be reflected im

ately, Blythe says. For example, a student may make an adjustment to a class schedule, which updates a replicated database on a mid-tier server but not in the database itself. if the student then runs across the hall to the bursar's office to pay a bill, the trans action may not have been recorded yet. resulting in an upset student who has lost faith in the system, Blythe says.

regists is a free-large writer based in Amherst, Mass.



IN THE HEXT PIVE YEARS?



DO YOU PLAN TO UPGRADE





Don't be so quick to rip the mainframe!



By now you've probahly heard the news. Recent studies say that five-year costs of applications deplayed on LANs are 1 5to 2 Stimes higher frame-centric appli-

production and test machines, you have cations. The main frame also beats

LANs in availability, response time, max

users supported. Superior metrics at er costs - who could want more? Unfortunately, your CEO has gotten all exeited about elient/server. So now ev-

eryone in IS is working to move your mis sion-critical applications to a few dozen LANs New what do you do?

First, be patient. The five-year cost studies will eventually show up in those in-flight magazine articles and your CEO will demand that everything be moved

back again. Second, let's diseard our prejudices about "one-size-fits-all" computing platforms. The future of computing is in ap-plications that span platforms. And the mainframe has an important role to play in that environment that cun't be se-

sumed by any other platform. The consequence is you're going to be required to squeeze more from your existing mainframe resources, "But," you protest, "my production machine is already running at 85% CPU-busy; what

can I do?" CPU-busy, not 85%, as many companies do. CPU time has no shelf life - one can't bottle it over the weekend and uncork it for use on prime shift during the regular

Competent performance specialists can "tune" mainframes to run at 100%

CPU-busy while apportioning CPU time

to various workloads in proportion with the relative importance of those work-

londs. The previously unused CPU time will be harnessed to "overachieve" ser-

vice levels and performance targets. Second, acquire and exploit perfor-

mance improvement software. System

tually eliminate time-consuming pro-

ceases such as directory searches and

program module loads by doing them in

rithms. Products that buffer I/O for

VSAM and IDMS are particularly effec-tive at reducing CPU time. I/Os and, con

sequently, elapsed time, especially for

emory using "Leapt Recently Used" al

software products are available that vir-

if you have multiple machines. What does this mean? Every machine should give preferential service to your most impor tent workloads and progressively lower levels of service to other workloads in deereasing order of relative importance.
If you've divided your workloads into

workload will get better service on yo test machine than some higher-priority workload on your production machine. Is that really what you intended? Finally, accept the fact that capacity

planning and performance management aren't part-time tasks You must be willing to commit the mon

ey and people to the job.

Anything sounds good in the abstract but can you successfully run mainframe at 100% CPU-busy and stratify workloads across multiple processs ore? Ab solutely. We've been doing this at Huma na for over 10 years Try it; you'll like it.

Vincent is director of technical services at Hu mana, Inc., a health care management firm in Looisyffle Ky



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from Sun, and Amdahl Corp. Hewlett-Packard Co.'s PA-RISC — used in machines from HP; Hitachi Data Syntams Corp. and Convex Computer Corp.

Intel Corp.'s Pentium — used in machines by Uninys Corp.

AT&T/NCR and Encore -IRM's RS-6000 — used in machines by IBM and Groupe Bull.

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ALREADY ARMOUNCED

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NCB 9000, Pyramid Nile Serien NS100, NS150.

**Accarabilits, asheat of the large-system market, such an

OLTP and decision: support, are being addressed by

vendors, lockating forded Squarer Research Corp.,

Tandeon, NObe and Thinking Mechines Carp.

By James Cassell



HOW THE ALTERNATIVE MACHINES WILL BE USED

THE OBSTACLES IMPEDING

Impediag progress is the need for robust, open software is support the full roage of operations and applications acro and beyond the enterprise. At present, applications have been limited to demonstrations of such obvious candidate as OLTP and database accessing.

WHEN ALTERNATIVES WILL BE IN FULL FORCE

IN FULL FORCE
All mainframe vendoes will make the trunsition to core pinators technology based on CMOS, incorporating mesolvely parallel designs by 1000. Yet mainframe costs will drup, even for new systems that do not meet the "Allermathre Criticalis". So along with older models, the traditional mainframe will not disappear

with older models, the transmosa matienases was see servey-activates one. The transferrance of the installed base will be more gradual. The transferrancion of the installed base will be more gradual. Nevertheless, Contract Group forecasts that alternative exactivations could gain a 44% share of the large-system market by 1004 they may protected the "gain house" in 1804 and 1304 and 1304

WHERE THE TRADITIONAL VENDORS STAND

WA CHINES WILL BE USED

As some object desiratives application, constituted computing will make a consoluted. The bower cost attenuation computing will make a consoluted. The bower cost attenuation of the enterprise data is sometiment.

In some consoluted consoluted consoluted and an additionable of the enterprise data is well as a second data or will as a second consoluted consoluted consoluted and an additionable of the enterprise residence for indications of the enterprise residence for indications of the enterprise residence in convenient data for the enterprise residence in convenient data for the enterprise residence in the form of attenuation enterprise residence, will applie to reviewed as an out-efficient enterprise residence. IBM: Its general-purpose abternative mainframe is expected by the end of 1990; he most difficult challenge is to break through its internal congestion with turnly achieve to support applications on alternative mechanics.

explications of abstractive modelness. Open place is a desired of schedule: But with the transmit it have in coupling lies instructioning; will write the result in the second place in the second place in the second place in the second place in facilities another — the 200000— for the defaultion of an abstractive, where must be conjunction with in the Enterded Provening longuist confession. In our fifteened analogous confession is not effective enables and the second place of the second provides of the second place of the

Cassell is vice president and service director of large







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Landmark garners top score in MVS performance software survey

perform can be a key factor in your information ity goals required by the comnany's bus

ment software can help to enare a system's efficiency by providing strators with a means to track wn bottlenecks and tune system

onitors that provide a dynamic win w into the system are the most widely d type of performance-enhancing ware, according to John Varanelli at New Science Associates, Inc. in West-

ptions, options, options at there are still other products in use. The old-fashioned method of making sys-tem adjustments after first analyzing

ms of historical data is still in use in ction with real-time monitors and is in fact the basis of the new swaerstion changes off-line.

In the Buyers' Satisfaction Scorecard user survey, Landmark Systems Corp.'s The Monitor for MVS (Tmoo) tallied the highest overall satisfaction score by achieving the top mark in 14 out of 20 cat-egories. Boole & Babbage, Inc.'s Mainw for MVS scored highest in five areas. and Candle Corp.'s Omegamon II for MVS, which commands the largest market share of the three products, took just

Tmon posted its highest scores for its bility to effectively oavignte to the source of a problem and provide a low overhead by its efficient use of the CPU's ources. The area where Tmoo was shown up by its competitors was in its rerting capabilities — Mainview's stron-

Mainview users awarded it the top res for both reporting and historical reporting capabilities. However, users were dissatisfied with its system predict-

g and "what-if" simulations. Although Omegunon scored the lowest overall satisfaction rating, overs gave it the highest overall rehability score, which in turn was rated to be the et important feature in an MVS perfor oce management system.

7.9

7.6

tion. Through the integration of each Each of the vendors has made a firm nitment to its service and suppor ets' components, administrators offerings. In the categories of quality of support and responsiveness of ven service, all three scored equally high marks. As with most software products, service and support was rated among the five most important qualities.

Scorecard is part of an integrated solu-

Candle Corp.

All in the family Each MVS monitor reviewed in this

are able to move through MVS and its in-terrelated subsystems — such as CICS. VDOM and DB2 - to the root of a bettle-Buyers' Satisfaction Scorecard is a

user survey of market-leading products conducted and tabulated by First Market esearch Corp. in Austin, Texas. For a complete methodology, contact Kevir Burden at (800) 343-6474, ext. 717. Ratings in order of importance

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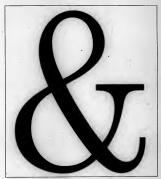
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أناسل الماسل الماسل المسال المسال

ightharpoonup Unisys 2200/500: Reduces costs, maintains performance

exputerworld's Firing Line is an evaluation based on interviews wit najor users at corporate and educational installations. The product under evaluation is being used in live application environments.

- Unisvs Corp.'s 2200/500, released in Septemher redefines the term "mainframe" by providing big iron performance in a midsize system.
- Evaluators said the system runs all existing applications at equivalent mainframe performance levels while substantially reducing the environmental costs of previous hardware.

sed on cutting-edge CMOS processor tech nology; the system formance in a package the size of an average

The air-cooled, 23- by 70-in. unit also eliminates the environmental costs of air-conditioning and water cooling.

The evaluators assisting in this survey included technical managers at a regional electrical supplies firm, a printing supplies con pany, a computer services firm and an insurance company. All were Unisys customers who had substantial investments in other Unisys hardware. Their experience with the 2200/500 ranged from late evaluation stages to an imminent switch to production.

The case of code migration won loades. Ports ranged from 10,000 transaction processing programs at the electrical supplies firm to "a illion lines of Cobol code. said the computer services evalu-

Also builded was reduced fispace, which, according to the insurance evaluator, was "oneteath" the requirement of existing

The format for this evaluation was created with the assistance of Howard Rubin Associates and Technology Investment Strategies

Because the 2200 500 is a new machine, the evaluators were unable to assess reliability under full production londs.

However, they agreed that the sachine would at the very least equal the stability of their current

Unisys mainframes

All evaluators had run bench

marks and stress tests that indicated performance would at least equal that of previous systems. Computer services firm: "We have test suites to get our measurcments, and from there we make inferences since we can't benchmark our entire environment. [Performance] looks at least as good as the estimates."

As longtime Unisys shops, the evaluators had extensive experience with the company's support personnel and policies. They agreed that Unisys provided technical support in meeting their re-

Electrical supplies firm: "[Uniays] engineers are usually here in

Computer services firm: "We com pect them to be here, and they

Unisys responds

►Third-party applications: As we roll out Posix, newly available with the OS 2000 opating system, Unisys and its stomers will have increasing opportunities to port commer-cial software, SX 1100, the 2200 mentation of Unix Systemides another path.

Installation The evaluators reported insta tion times of only a few hours for hardware and software and peripheral configuration. Electrical supplies firm: "They olled it up the elevator, down the hall and plugged it in."

The evaluators spent from \$1 mil ilon to \$2 million on the 2200/500 including peripherals. All intend-ed to use existing storage devices, some of which they had recently

m is unparalleled among mid-inge and iarge-scale main-ames on the market. The new pea/OLTP product suite, ed on aggressive implement on of the X/Open DTP stan

p-LAN support: Open 2250/500 systems offer a variety of LAN connections and services for in-tegrating PCs. Windows, OS/2, Unix, Apple Computer, Inc. and Microsoft Corp. Windows NT

ograded in anticipation of the 190/500. The maintenance costs for hardware and software are unb ably flow compared with previous

Unisys hardwarel."

nators reported that all of their existing applications and batch utility programs would con-vert to the 2200/500 without

any modification. Printing supplies con ny: "It's just a matter of hooking up the disk drives We've tested all of our app tions, and all of them will be running [on the 2200/500]."

Situe
About half the size of a home refrigerator, the 2200/500 will leave
many shops with a great deal of
ampty floor space. The printing
supplies evaluator said his computer room will look like "a foot-

ball field" once old mainframes have been moved out. Computer services firm: "It's dwarfed by the peripherals and communication equipment. You'll have trouble finding it [in the com-

puter room]."

Operation
The evaluators said operating the
2200/500 was little different from other Unisys mainframes. They anticipated no change in the size or work load of their operations

Because it would be running mi grated batch and utility software, the evaluators foresaw no chang-es in the level or type of automa-tion the 2200/500 offered over previous systems.

Evaluators concurred that the 2290/200 is easier to expand than other mainframes. Peripherals can be added on the fly without a is easily handled from software Computer services firm: "If you want to add a processor, it's a sixgle board."

insurance company: "Will more memory, it will greatly out perform [existing maintrames]."

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DESPITE SIX FIGUR

PRESSURE ON STAFF

SITES FOR THE CHANC

TO GET A JUMP ON

COMPETITORS



Bill Reiher, vice president of central systems at Bauter International, vaya a three-month beta

The lure of outsmarting the BY KIM S. NASH competition and exploring new technology tempts many firms to beta-test unproven products. But it's a big leap from cracking the seal on newlangled hardware and software to running rings around your rivals by using new systems. Beta tests are expensive, time-consuming and can be a drag on the information systems staff, participants say. Yet an estimated 50% to

60% of Fortune 1,000 firms have betatested products at one point or another, with about 20% regularly involved, according to analysis. Common reasons for putting themselves through the hard work include free staff training and unprecedented access to vendors, according to several large beta sites.

But the No. 1 reason companies test products is the opportunity to turn new technology into a way to beat competitors.

"Anything we can do to make [us]

On trial, page 112

On trial

CONTINUED PROMPAGE 111

nore attractive is going to have an impact on husiness," says David Cochran, technical coordinator for architecture at Delta Air Lines in Atlanta.

To that end, Delta has been testing Sybase, Inc.'s next-generation database and related products to see how they fit into its vision of the "airport of the future." Delta plans to modernize

asic airport operations, such as baggage handling. ssenger check-in and gate agent information at airports in all of the 217 cit-ies and 34 countries the airline services. Delta bopes the Sybase products will belp it achieve its goal of synchronizing constantly changing flight data, which is currently scattered across Delta's far-flung locations.

In the works is a scaled-down prototype of a companywide applion that uses Sybase's Replica tion Server and Navigation Server products, which were designed to copy, collate and distribute information, in real time, between da-

Gaining an edge Companies that beta-test prod-

ucts "can get several months or even a year ahead of the general public on figuring out bow a new technology may or may not fit into their operations," says Peter Kastner, an analyst at the Aberdeen

Lawton Liewellyn, chief sys s officer at American General Life Insurance Co. of New York agrees. A preview of products coming down the pike — and the opportunity to influence that tech-nology — can be turned into IS initintives that pot beta sites ahead of the competition, he says. Lieweltyn is working with Tri-

cord Systems, Inc. superservers.

The Syracuse, N.Y.-based firm is moving 100 years of insurance policy records from 25-year-old mainframes and minicomputers to two Tricord ES/5000 machines tested early last year.

With superservers and network-

75,000 alpha, beta and other duction copies of Windows

HT to about 300 users involved in testing the perating system. That's quite different from the ed beta cycle that DOS 4.0 went ough, says Aberdeen Group's Peter Kastner DOS 4.0 ended up having a lot of bugs bec

of that, and the release has a had reputation to this day," Kastner says. AT LEAST ONE-THERD of the products that tors put into beta every year never see the light of day, says Howard Anderson at The Yor

Group, adding that products are conceled when het conditions change, user dem dors hit rough financial times. PRODUCENAL SERVICES, retail, trans-

forms are great likely to be TAL DISCOUNTS are thin is

doing beta tests. Vendors will often let beta sites keep a copy of the most current version of the product when it starts general shipping, Even so. users then most pay for maintenance and support on that product.

ing gear, he says, insurance salespeople should gain faster access to American General's 15G bytes of data, cutting processing speed from five or more minutes to a few onds, Liewellyn says.

These companies are bot to beta, despite the drug on staff and befly price tags associated with being a test site. Howard Anderson, an analyst at The Yankee Group in Boston, pegs the amount at \$100,000 to \$150,000

per project. Expenses accrue in tangible areas such as buying new hard-ware to accommodate upgrade re-

quirements for the new software. For example, Westinghouse Savannah River Co. upgraded several Digital Equipment Corp. VAX 3100 machines to VAX 4000 models to handle the testing of Oracle Corp.'s Oracle 7 database," says

Suhm. Corrett envilla leader of manufacturing support systems.

Suhm declined to specify how much the hardware cost, saying only that "It was

significant." Less concrete are the people costs associated with taking one or two - sometimes more - 18 workers

off daily operations duties at least for part of each day Would-be sites

for Informix Software, Inc., for instance, must take staff time to design detailed project plans showing how the test product will be used in con-

junction with other technologies. Licens are size expected to attend two- or three-day

training classes at Informix facilities in either Kansee or California. Once the project is underway, users must allot time for weekly conference calls with Informix engineers to talk about that week's scheduled experi-

At Baxter International, Inc. staff members spent two days mapping out how it would put Dun & Bradstreet Software's untested SmartStream financial package through its paces, says Bill Reiher, vice president of central systems in the course of an initial three

month project to test Sm On trial, pagel 16

CITICORP MORTGAGE, INC.

. Informix-OnLine database, Hyperscript, View

other develop Microsoft DOS 6.2 Microsoft Windows 4.0

BUG WATCH

Criscorp Mortgage discovered "a handful" of bugs in DOS 6.2, "but only one of them would be a "gotcha," " says sen applications analyst Stephen Skinner, declining to elaborate.

Bets tests spur brainstorming sessions in Citicorp Mortgage's IS department.

"You get a key new product in and the possibilities pop out at you," says Stephen Skinner, senior applions analyst. It "gives you ideas about where to take IS," he says.

Citicorp Mortgage initiated a beta test of Informix's Online database six months ago and is studying beta. and early versions of new massively parallel processing (MPP) features in databases from Oracle and Sy-

Those experiments have con-



The St. Louis division of Citicorp NA plans to port

mission-critical mortgage leading applications from Pick Systems' Pick operating system to an MPP version of Unix, according to Skinner. The company hasn't made a final decision on bardware, but infor-

mix will be the database, be says.

What's more, Skinner wants to redesign key applications for client/server computing. Hence, bets tests of Microsoft Corp.'s DOS 6.2 and Windows 4.0.

Insight into vendor thinking is the best part of beta-testing, Skinner says. "Engineers and other people at the companies are more forthcoming about plans be-enose they see you're a serious costomer," he says.
"You can get information you wouldn't otherwise re-

Also valuable are informal support groups that have erupted among users beta-testing the same

Help from the user community keeps Skinner and colleagues sane as they delve in and explore unchart-

"It's the higgest confirmation that you're not

crazy," Skinnersays. -Kim S. Nash

CHEVRON CANADA LTD.

ows NT and SQL Server for NT database

- Microsoft LAN Server

An early version of SQL Server for NT was slow at checking the consistency of the data base, but Microsoft was quick to fix the bug.

ta testing is on the rise at Chevron Canada as the firm dies further into client/server computing

Understanding how to navigate the new terrain is

tough, but almost six months of beta-testing Winds NT and SQL Server for NT databases has given Chevron's 23-member IS team a sense of the future. "Bela projects give us [client/server] knowledge, something to get our arms around," says Bill Soper, manager of information service

The only way to get hold of some of the newer, fancier functions touted in emerging products is to become a beta site, says Dan Chorney, lead database administrator Vancouver, B.C.-based Chevron currently uses the IBM OS/2 edition of Microsoft

Corp 's SQL Server database but wants to swap that out for NT products. "If NT is the key strategic direc-tion for Microsoft. I'm not sure how much correy they'll put into keeping OS/2 stuff going," Soper says. Therefore, Chevron wanted to try NT products right

away to create blueprints and budgets for client/

To outfit itself for the beta project, Chevron had to buy several 486-based servers and worksta-tions at about \$15,000 a pop. Microsoft hand-

ed Chevron a 120-day CompuServe ID and a apecial technical support phone number through which to report bugs. Beta testa have become part of everyday life at Chevron for most IS staffers. Thos who participate spend an average of an hour or two per day beta testing, according

"if it's part of your job to belp the company make decisions about the future," Chorney adds, "making time (for beta work) is a pecessity.

-Kim S. Nash

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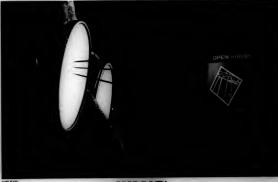
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The top of our midrange line intil the end
of our family, tip to 32 Features chaps deliver
executional power, while Dickberger PBS

BRANCH SERVERS

On trial

CONTINUED FROM PAGE 112

Stream, Baxter apent about \$100,000 in personnel costs, Reih-er says. The Deerfield, Ill., compamy has continued in dabble with SmartStream for the past two years but is in oo burry to impleent the project.

Only one shop interviewed, King County Medical Blue Shield, is in the process of putting in place a dedicated beta staff. About 10 people out of a 500-member IS staff at the Scattle-based health maintenance organization participate io beta testing (see story at right).

King County Medical may he on to something. Some people in the trenches say the schizophrenic oatore of handlingeveryday IS duties as well as beta testing can take a toll. "I felt a little stressed about my priorities at times," says Greg Veitch systems applyst at Sometimes the beta expe-

rience is like a Pandora's boy "We you all the fance things [Sybase's new products] could do and wanted to tr them all out," says one database analysi at a bank. Soos, what had been a limited four-week trial with one staffer swelled to a two-per son, nine-week disorganized effort that raised as many questions for the company as it answered, the analyst cave

The rule of thumb in beta proiects is to run them no longer than two or three months, Anderson abend of other Oracle users now says. "If you can't tell what a new oduct is going to huy you in that Suhm nave. "We have experie-need igth of time, then something's staff ready to install clicot/server

wrong," he explains

Being a seasoned tester can have a drawback of a pontechnical kind - popularity. Sean Dittmore. beta manager at King County Medical, which is currently testing more than \$500,000 worth of software, says his shop became a tar

get for every software company on the planet with a product to test. "About a year are, we were getting calls and packages from several companies per day." Dittmore

ays. "We've had to say 'no' a lot." One benefit that can offset any drawbacks, however, is the virtually free training IS staffers get. Late last year, two programmers at Westinghouse Savannah River got two weeks of instruction from Oracle in the intricacies of the Oracle 7 database: "We're way

Vendors will often send engineers on site to larger beta projects, giving IS workers instant access to product experts. Such hands on guidance saves time and money that would have been spent on training when the beta product

goes live. Kastner says Beta testing also helps users double-check vendor-sumplied information, says Ken Doolan, presi-

deat of Everest Technologies, Inc. a Houston consulting firm 'If Sybase says it's putting in Y or Y canability into its

on them." Doolan says. A former programmer at BP Exploration, Dooigo betatests Sybase tools for the nearby oil company The direct access to yeador engineers that beta

sites gain often vields information about what is realistic to expect from specific versions of products. "Sales types want you to think that everything you've ever wanted is in the new product," says Stephen Skinner, senior applications analyst

at Citicorp Mortgage, Inc. But technicians tell you want you need to know." (See story page

Plus, doing a beta one year may help IS managers hope next year's budgets. Managers can know ahead of time whether a product due out next year is worth huying, says Bill Soper, manager of information services at Chevron Canada Ltd. in Vanco ver British Columbia. "It's a way of adding a little more certainty to an uncertain future." Soper says.

Nash to a Commuter world West Coast correspondent

THE IOUG AND ORACLE SUPPORT DIVISION ARE UNG TOGETHER TO FIND QUALIFIED BETA TEST SITES FOR NEW GRACLE PRODUCTS. ALL BETA SITES SHOULD BE PREPARED TO:

· Provide weekly status reports of their testing activities and file but reports on the products they test.

. Devote at least 10 hours per week to tasting the products. . Obtain all hardware and softwore from other vendors prior to . Travel to central location at their own expense to attend training

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KING COUNTY MEDICAL

- Marmonth Windows NT and SQL Server for NT database Must Software International's Normad Systems
- . Integral, Inc.'s chent/server human resource and payroli applications . KnowledgeWare's Object/view and Microsoft Access

development tools

organization.

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Microsoft drivers work more quickly and efficiently with Mi-

sie Dittmore says

crosoft's Access and Visual Ba

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as long as we doo't put any-

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pproves of all this beta work

Dittmore explains. He and about

10 other IS people spend a cou

ple of hours each day trying out new technologies and have

Most tests run two or three months, but some produ make it beyond a few weeks. Early releases of InfoDenigner, a database designer from Asymetria Corp., had too many

bugs so King County had to put it acade. King County says it places to reopen the beta when Asymetrix sends a more reherent version of the croduct.

More than \$500,000 worth of software resides in the beta-test shop at King County Medical Blue Shield in Seattle.

Microsoft Corp. is the most favored softwore suplier at the Seattle health maintenance organization, but elient/server development and management tools from several other vendors are also being beta tested

(eee list above) Once an informal process for anyone willing to put in the extra hours, beta testing at King County Medicut in becoming more organized. Formalizing the process helps document projects, as well as keep track of the length of testing. The company has begun assign ing specific staffers to lead tests of individual prod ucts, according to Sean Dittmore, bets manager at the

Dittmore is currently handling dry runs of Windows NT products and looking into side by-eide comparisons of client/ server development tools from

Microsoft and KnowledgeWare

SEAN DITTMOSE Dabbling in several kinds of pre production offerings and pitting AND ABOUT 10 similar products against one an-OTHER PEOPLE other has helped King County Medical choose the best tools for PEND A COUPLE the job, he says. For example, tests of various Open Database OF HOURS EACH Connectivity drivers from both MY TRYING OUT IBM and Microsoft proved that

NEW TECH-HOLOGIES, THEY MANE ERECTED

SEPARATE

DATABASES AND APPLICATIONS

erected separate networks, da tabases and applications just for testing software. Overall, Dittmore says be likes the idea of beloing in shape a preproduction product for the commercial

If my work makes the thing better for my company, it's worth it."

- Kim S North

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to be more knowledgeable about computer sechnels than over before, but they have all recomm more desintating and levenome more desintating and levenome, as new narrey has four While they believe infernation to eloopies see the key to competitive adventage, they also my that they has to been getting their money's word. The survey, conducted by the competitive and the survey conducted by the competitive and the survey of the survey of

The staves, communities of your community papers includingly newspapers, Community usual and Andensen Consoliting, all found that 81 percent of sop succeives are personally using companies in their daily jobs, nearly double the precentage reported when the survey was first taken four years ago.

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More than 200 cheef executives, cheef operating officers, and cheef financial officers, representing a broad range of beninesses, portocipated in the study, the results of which were published in Computerworld last week, Annual compute sales ranged from 11th uniform & 201 hillion. A... CUSTOMERS
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to go. Said Luny Ellison, CEO and co-founder of Oracle: a software company: "This is the outstand.

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Computer Careers



id's play. But once programs ad that broad skill sets, both old

ny programmers, for instance, have ilder products such as Powersoft Corp.'s PowerBuilder or Gupta Corp.'s SQLWindows. Great for quickly pulling her tactical, client-centric ap tions, these products can quickly enhance a programmer's knowledge — and

However, a programming team may run into obstacles when creating com-

sion in Chicago, comes with the architectural changes brought on by client/ server. With host-based systems, data from the mainframe to a 3270 terminal; With client/server, however, network unication becomes an essential

OLD AND NE



ing based an protocols such as Named Pipes, NetBIOS and TCP/IP, as well as fa-miliarity with many different platforms. "The danger some programmers face is that they become so enamored with the new operating systems that they farget the rest of the world," Wybolt says. To me, the ideal client/server program ming eandidate is someone who can ments but also brings other systems ex

three-tiered architecture, where W down clients access relational data from Unix servers on a LAN and also interface with a corporate database on a main frame running a CICS transaction me tor. Creating such a system requires knowledge of all the platforms and operating systems involved, Wybolt says, as well as experience with application partitioning.

server application might be based on a

To case the hurden of interapplication communication, some companies rely on iddleware, a software layer that sits between the network and the applica-tion. Middleware shields developers from low-level networking complexities by enabling them to write app based on a common, system-level app cation programming interface.

Alex Bakman, a senior systems consul-tant at Unum Life insurance in Portland, sine, says middleware sayes corpora rogrammers a lot of time with low-level nmunication coding, making it an esial tool for client/server developers.

Some high-end development tools are middleware integrated with the werall environment, such as Anderses Consulting's Foundation for Cooperative Processing, Programmers can also turn to one of the stand-alone products such as Peer Logic, Inc.'s Pipes or TransAccess from Netwise, Inc. in Boulder, Colo. Whatever the mix of old and new, it is a

mistake to base your career on expertise in one particular language or tool. "It's the guy with a true systems-level view unies are paying a lot of mon for," says Bill Jacobs, marketing vice ident at Netwise. "Step back and try to understand technologies that are not only on your block but maybe one block

Baum is a free-bases writer in Santa Barbara. Calif., who specializes in emerging technol-



Exploring some avenues to 'real code'

Writing batch files, XBase provides foundation for place in development project



BY DAVID MICHAEL

you can fit into a development team, and you have a small foundation to work from right now. For instance, writing batch files and XBase code is programming experience. Designing dBase data-

bases will also help you work in a database analyst capacity. Start by determining the project's nature and decide how you want to fit into it. If possible, get a as firm that copy of the tools and familiarize yourself by building your own ap-

Turning

Technology

Into Power

Plottle Camers Begin With Florida's Lander In Community Training and Postmanne Placement

Topo Service
LEFT See Nove Suit Service S. STOP SERVICE S. STO A Control of the Law Co. - In Landson, IL 1935. Divine to the same of the

dting and

If only advanced programming sositions are available, prepare by getting hands-on experience writ-ingreal code. In addition, try using the traditional methods such as classroom training and reading books

Define the application a Certain communications packkages require significant cononal memory, a third-party mory manager may be re-red, which will add to your total

the new application suite on cur rent hardware for acceptable per

*Upgrade or purchase hardware when necessary. · Divide the hardware don

types and create standard config-urations. Different makes, models and configurations may requi erent setups. Grouping hard-

ementing on a LAN, det mine how Windows and the appli-cations will be installed. Server in-

stallations case maintenance but slow the network. Client installa-tions perform better but are diffi-*Consider training and su-

most important issue. Even will fall if training is not begun well

Developers should focus on Windows and client/server architecture. As far as progra ols en. C. C++. Visual Basic and Visual C++ are hot. If you do not have experience using one of these tools, buy one today, and be sore to start writing object-orient-

perience is harder to obtain out-

side the workplace. Ideally, a diveloper's skill set should include at least one high-level client/ rver development tool, such so rversoft Corp.'s PowerBuilder of opts Corp.'s SQLWindows. These

You can take advanta crosoft Corp.'s Access, which pro-vides a similar environment to milder at a fraction of the

out their directory and number them along with the disk before fli ing for easy access. To keep on top of noftware updates, regularly canvas software vendors because

they won't always come to you. Lastly, ensure that the com software and manual storage. dly, be sure to work with the network manager to mo



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Communications stocks not for the fainthearted

For the past month DSC Communications Corp. (DGI) has been bouncing up and down like n yo yo. The pateck has been on one side or the other of the long sainers and loares that! for five weeks running. And Newhridge Networks Corp. (NNXCF) has oscillated right alongside it.

Analysts pointed to a variety of factors for the volatility of stocks in broadband communications, including momentum investors, industry announcements and profit taking tum irrectors, industry announcements and proof taking.
"They are victims of their own past success," said Bok
Kim, anniyst at S.G. Warburg & Co. "After having exceeded
everyone's expectations for several quarters, Newbridge
has only met expectations for the most recent quarter! So
all of a sudden momentum players get out of the stock," Kim

"DSC's stock has run up substantially in the past 12 months. People had such good profits, they just took them, selling the stock and pushing the share price down, said mes Hartke, director of research at Laidlaw Holdings.

Analysts agreed that while the stocks may not settle down diately, these companies enjoy good long-term possi-es. "Everybody's results were strong, and the next arter looks promising as well," said James Kedersha,

Cowen & Co. vice president.
"I expect them to rise even in the short term — if you mea re short term as anything longer than a week." Hartke



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Computer Industry

SSA results rise

s, Inc. last week post of \$9.5 million, a 17% inase from the same peri ast year Revenue in the peried ended Oct. 31 rose 16% \$83.2 million, the Chien eloper said. Though e jumped 15% to \$263.4 illion. The year-to-year mparison was skewed by counting changes made to

KnowledgeWare, Inc. has agreed to seil I million res at \$14.75 a share to gement, well-knows ser irwin Jacobs and ial and pay off obl ns. Prior to the tran pany had 13.3 million

AST Research, Inc. in Ir-vine, Calif., has postponed a proposed offering from Peb-ruary to March of zero coueonvertible subordin actes due in 2013. Tho offering, which is being un rwritten by Merrill Lanch & Co., is expected to rai: \$100 million for the PC mak er. Proceeds will be used fo

ORT TAKES Sungard covery Services, Inc. in yne, Pn., has completed acquisition of Computer

PC market share

AST purchase staves off backlog

AST Research, Inc.'s purchase of Tand Corp.'s PC manufacturing facilities has not only catapulted it from a seventh- to fourthplace ranking among top PC makers, but it could also be all that stands between AST and the backlog

woes affecting the Top 3 compa Revenue So far, fiscal 1994 has been more than kind to the Irvine, Calif. maker. AST posted record revenue

totaling \$514.4 - an increase of 80% over the cos rable period last year and 26% over the preced ing quarter. Net income was \$8.2 million vs. \$7.6

million for the same period last year. The company also

shipped a record 332,000 units work daring the first quarter - an 111% increase over fourth-quarter 1993.

In addition, the recently completed \$111 million deal with Tandy cetted four manufacturing plants and the Grid and Vector hined with AST's existing assets, have

almost doubled the company's cloud.
"The Tandy acquisition was a big plus for AST. All of a sudden, they're No. 4," said ndal Giusto, an analyst at WorkGroup Technologies, Inc. in Hampton, N.H. "From

11.8%

9.5%

6.1%

5.6%

a volume stand point, it's a hage they have to foeus on image," be added. Gitaste said be did not foresee this be-

ing a significant problem because AST's "brand name is strong." Moreover, the additional manufacturing capaci ty could not have come at a better

time, according to Howard Elise vice president of keting at AST. He out all of its prod net line for the fourth calendar quarter and

faces backlogs across nearly all its lines as well. "We think this integration goes a long way toward solving this problem," Elles

Resellers contacted said that while they faced minimal backlogs on various AST

We have experienced some supply problems but not any worse than those with IBM and Compaq equipment, not even close, "said one reseller, who requested an-

Manufacturing moves Quick to react, AST has drawn up world

wide integration plans for Tandy's manfacturing business, including the follow-

mobile computers in Fountain Valley, Cal-if., and Taiwan. Establish Fort Worth, Texas, as the center for worldwide production of processors. Move desktop and server production for the American from Foun

rain Valley to Fort Worth.

*Consolidate all distribution and reperture from East Kilbride, Scotland, to Limeric Ireland; shift desktop production from Tai wan to Ireland and Vector and Grid brane

production from Scotland to Ireland. AST expects the restructuring to rest in a 40% increase in worldwide manufacturing and to be completed by next June

To cover these restructuring co AST took is opetime charge of \$125 million in the fourth quarter last year and will lay off about 1,650 workers. Nearly balf of these cuts - 450 - will be desktop and server manufacturing positions in Pourtain Valley.

However, 850 new jobs are expecto created in Fort Worth and Limerick.

Mayerick will push IBM open

By Ed Seannell LASTEGAS

Labeling himself a "mayorick" in IBM's rolatively conservative corporate esiture, James Cannavino said be bopes to be the catalyst who pushes IBM into an era of "I think [IBM Chief Executive Office

Louis V. Gerstner] wants me to shake things up a little," said Cannavino, fresh from his appointment as IBM's senior vice president of strategy and development.

Perhaps with that in mind, be admitted in ex/Full '93 interview that the tir bonored concept of account control at IBM is dead. Even so, Cannavino predicted that IEM's mainframe hardware business, long symbolic of the company's proprietary bent, will be profitable for at least another

"It is folly to believe you can make cu lomers move to something [when] they don't want to. When you do business with a customer you want to add value, not lock them up with something proprietary," Cannavino said, in what would have amounted to heresy at the old Bir Blue.

in that vein, he said the end game of IBM's energized commitment to true open standards is eliminating the need for its argest corporate customers to "place ets" on which de facto standards to back.

We want to take the risk of betting away from customers who should not be in the

One such example, he said, is that IBM's PowerPC-based systems can run RISC- and complex instruction set computing-compatible operating systems, and the Workace OS operating system can support ultiple personalities — or the look and el of several graphical environments. So nsers now have more freedom to tailor an open strategy that goes hand in glove with



nent, butter to shake things up But he said he clearly realizes that jus-

saying IBM will do something can no longer held large corporate accounts in the com-pany's sway. "IBM is going to have to demonstrate it is capable of delivering solutions to real-world problems," Cannavin

Many corporate managers said they be-lieve Cannavino is moving along the right track, but still, they wonder if IBM will move fast enough to provide those solutions giv

INDUSTRY PULSE: Computer industry

| | PC har | dware | | |
|-------------------------|------------|-----------|-------|---------|
| - | la termina | Trees. | | |
| | - | - | | 2 house |
| Apple Computer, Inc. | \$1,740.2 | \$1,862.0 | 13,4% | 2.5% |
| Compaq Computer Corp. | 5827.0 | \$1,632.3 | 75.0% | 45.4% |
| IBM | \$1,523.8 | \$1,539.0 | 4.6% | -6.4% |
| Dell Computer Corp. | \$467.3 | 5700.6 | 91.5% | 42.7% |
| Gateway 2000, Inc. | \$248.6 | 5441.8 | 73.3% | 41.3% |
| Digital Equipment Corp. | \$206.7 | \$425.7 | 46.7% | 146.7% |
| AST Research, Inc. | \$366.3 | \$409.2 | 40.0% | 10.7% |
| Hewlett-Packard Co. | \$301.3 | \$358.5 | 14.0% | -0.3% |
| Unisys Corp. | \$176.7 | \$163.0 | 4.5% | 4.6% |
| | | | | |

Average U.S. desktop/tower street prices

| - | | | | |
|-----------------|---------|---------|---------|---------|
| 386SX, 33 MHz | 5920 | 5090 | 300 | 3010 |
| 486SX, 33 MHz | 51,610 | \$1,550 | \$1,520 | \$1,460 |
| 486DX2, 50 MHz | \$2,150 | \$2,050 | \$1,950 | \$1,820 |
| 486DX2, 66 MHz | \$2,400 | \$2,300 | \$2,290 | \$2,040 |
| Pentium, 60 MHz | \$5,420 | 55,130 | \$4,930 | \$4,530 |
| Pentium, 66 MHz | \$6,510 | \$6,120 | \$5,820 | \$5,250 |

Based on average configurations for each time frame: prices do not toclude monitors laure immediate for Cop., Paragram, Mass.

The 5th Wave by Rich Tennant

In response to videophone technology, BulbBrain Corp. releases a phone system fitted with a continuous action flash camera limbed through the callers fax machine.



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Reigniting the flam

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Money changes everything

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Uniface takes bits of Apple

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